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REPORT OF THE CAVALRY BOARD ON VARIOUS BITS SUBMITTED FOR TRIAL AND REPORT.

IT has been the aim of the Cavalry Board to compare, side by side, the various bits submitted to it, and to obtain for the cavalry a much needed change for the better. As a consequence, the following report will cover three bits submitted and recommendations embracing the opinion of the board as to the best equipment for adoption for cavalry only.

GREBLE BIT.

In compliance with the fifteenth endorsement on letter from the office of The Military Secretary, Washington, D. C., dated October 21, 1904, in reference to a bit submitted by Captain E. St. J. Greble, Artillery Corps, the board offers the following objections to the adoption of the bit for the cavalry service:

1. The flanges on the inner side of the cheek-strap attachment work into the inside of the horse's lips and irritate the animal.

2. The cheek-strap attachments are too weak, and are easily bent out of shape.

3. The movable cheek-strap attachment would be easily clogged with rust and dirt so that it would not revolve.

4. The results of the action of four reins on a single mouth-piece do not compensate for the additional trouble incident to their use.

5. The great expense attached to the manufacture of the bit would put it out of reach, however valuable it might be.

POWER BIT.

In compliance with the tenth endorsement on a letter from the office of The Military Secretary, Washington, D. C., dated July 14, 1905, in reference to a combination halter, bridle and bit, invented by Veterinarian Richard H. Power, Artillery Corps, the board submits the following objections to the adoption of the combination for the cavalry service:

1. No combination halter and bridle is satisfactory because horses in the field continually break their halters at the picket line. Plain halters can be easily improvised, but if the improvised halter must also carry the bit it would be a difficult matter.

2. In garrison it would be impossible to present a clean appearance when the bridle is used also as a halter.

3. The close fit and constant wearing incident to a halter-bridle, causes sores, often serious, about the horse's head.

4. The objection in the Greble bit, applies also to the Power bit, that the results of the action of the four reins on a single mouth-piece do not compensate for their use.

SIEVERT BIT.

In compliance with the fourth endorsement on letter from the office of The Military Secretary, Washington, D. C., dated January 17, 1905, in reference to a bit submitted by Captain H. A. Sievert, Ninth Cavalry, the board finds the following objections to the adoption of his bit for the cavalry service:

1. Although the snaffle action is fairly good, the curb action is a failure, because the mouth-piece is broken and the bit "falls through" if the curb chain is properly adjusted in the chin-groove. If the curb-chain is shortened sufficiently

to give curb action, the chain *must* ride up out of the chin-groove upon the sensitive parts of the jaw, and the upper branches are pinched with force into the cheeks of the horse, causing abrasions when the sensitive parts are forced against the sharp edges of the upper teeth.

2. The bit is not strong enough, and would not stand rough usage.

3 The single curb-rein attachment causes a horse to bore to one side.

4. It is not possible to get any curb-and-snaffle action together.

5. The bit is injurious to the horse; either the joint of the snaffle is forced into the roof of the mouth, or the curb-chain rides upon the sensitive jaws. One of these two evils must result from its use.

* * *

In connection with the above reports on the various bits mentioned, the board wishes to state that tests of many bits have been made at this post within the last two years, with a view to finding the best for the purpose desired, and the subject has been thoroughly covered. All models of modern bits now on the market have been purchased and tried. All modern authors on the subject have been consulted, and the board deems this an opportune time to submit the results of its observations.

The course in equitation for officers at this school was the first in our service. At its inception, no authorized system of training was prescribed, and it was therefore necessary to consult recognized authorities. No system could be found in which the bit and bridoon was not the key. As a consequence, the bit and bridoon was adopted and has been used in the school with surprising results. The combination has stood three years' test, and the troops of this command are now using improvised double bridles with very satisfactory results.

All manner of bits have been experimented with in the school, but only the double bridle has given the desired re-

sults. All of the new-fangled bits that have been recently in vented have four reins, but the inventors seem, in each case, to have lost sight of their logical use. In the bit and bridoon, the snaffle is intended to elevate the head and pull it around laterally, while the curb in intended only to depress the head and restrain the horse. The snaffle acts on the tongue and sides of the bars, while the curb acts on the tops of the bare sensitive bars, their two actions entirely distinct,

PLATE A.

and it must be apparent how unreasonable it is to expect to obtain these two separate but necessary actions from one mouth-piece.

It is immediately apparent that the harder the pull on the curb reins attached to a lever of the second order, the lower a horse's head must go. This accounts for the bolting horse setting his chin into his chest; having no snaffle, the soldier is unable to pull the chin out from the chest, although he is

frequently blamed for not controlling his horse. It must also be apparent why our horses either carry the nose stuck out straight ahead or bent into the chest (both incorrect positions), simply because they must either put the bit out of position for right angled pull on the lever of the second order, or else they must give to it as far as their conformation will permit.

It is also apparent that, if the bit and bridoon is used, the

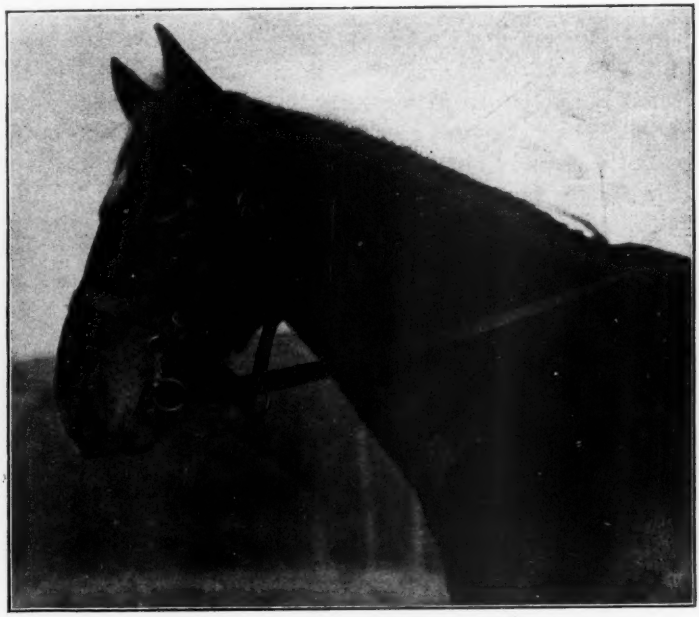


PLATE B.

head can be elevated by the use of the snaffle, and the chin pulled in by the use of the curb, thus bending the neck just back of the poll and placing the horse in perfect balance and under perfect control. The case is best illustrated when a man stands erect and pressure is put against his chin; only a few pounds will be necessary to push him backwards. But if he lowers his head, it requires great weight on the chin to keep him from going forward. The principle applies exactly

with the horse. With the bit and bridoon it is impossible to encounter the very common evil of pinched lips. The bridoon, properly adjusted in the corners of the mouth, is above the curb-chain and acts as a guard.

When this combination is used by every other military nation, as well as by every civilian horseman, trainer, cross-country rider, polo player, in short every horseman but the United States cavalryman, it must be self-evident that there are virtues in its use.

Troop commanders are handicapped if they attempt to apply any of the systems advocated by the authorities on the subject of training, because the double bridle is the key to all of them. The argument may be advanced that the men cannot be taught to use four reins. This, however, has been tested and found to be incorrect. There are a few men that could not be taught to use even one pair of reins in a hundred years; but the improvement in the training of the horses that will result from the use of the double bridle will enable the troop commander to mount such men on horses that will need practically no rein work.

The present watering bridle is an unsatisfactory arrangement, on account of inability to adjust it. It is either falling out of the horse's mouth or else the halter is choking the horse in the soldier's effort to draw it up tight enough to set the bit in place. The board is of the opinion that the bridoon of the double bridle could be used to much greater advantage. This will do away with the extra equipment and will avoid the necessity of having leather straps for head stalls attached to the present watering bridle.

Drawings of the bit and bridoon, properly adjusted, and of the Boucher bridoon used as a watering bridle, are hereto attached, marked respectively "A" and "B." This bridoon is particularly adapted for use as a watering bridle, as it has an upper branch to which the head strap is attached, thus preventing slipping through the mouth—a fault with all other kinds of bridoons and snaffles.

Such a combination as proposed is ideal for a cavalryman. He has the bit and bridoon for training; an excellent snaffle to be used alone; a curb bridle for use alone, after the horse

is thoroughly trained; and no additional equipment more than at present (in fact, the weight is much reduced).

It is a well known fact that most of our cavalry horses become worthless as a military machine from the criminal abuse of their mouths; and the improvement sought in that direction is of vital importance. Every effort should be made, both by improvement in equipment and by systematic instruction in training, to place our troops on a war footing with the cavalry of European powers, which is mounted on superbly trained horses. Applications to this school come in daily from the mounted service at large, asking our methods of horse training. When the information is furnished, the methods can not be used because the equipment is not on hand. This is so discouraging that the old *no*-method is continued.

The board is also of the opinion that the present curb bit is unscientific and not in the line of advancement, for the following reasons:

The sizes are ridiculously large. No. 1 is 4½ inches wide; No. 2, 4¾ inches; No. 3, 5 inches. It is safe to say that there are not five horses in the cavalry command at this post* that would require a five-inch bit, and the majority would require not over 4¼-inch mouth pieces. No such bit is made by the Ordnance Department. The sizes furnished should be—

No. 1:	4	inch;	port,	1¾	inches	wide,	1	inch	high.
" 2:	4¼	"	"	1¾	"	"	1	"	"
" 3:	4½	"	"	1¾	"	"	1¼	"	"
" 4:	4¾	"	"	2	"	"	1½	"	"
" 5:	5	"	"	2	"	"	1½	"	"

These sizes would fit anything from the Philippine pony to the heavy artillery horse. Each troop commander should measure and make a record of the size needed for each horse in his troop; should make requisition for the exact size, and should see that the horse wears this bit at all times.

The upper branch of our present bit is too long. It is now two inches from the mouth-piece to the curb-hook and should never be more than one and three-fourths inches

*Fort Riley, Kansas.

The upper branches should bend out on a gradual curve from the mouth-piece to the top of the upper ring at least three-quarters of an inch, to insure plenty of room for horses with prominent upper molars.

In the opinion of the board a powerful but not a severe bit is desired.

The power of the bit increases as the lower branch is lengthened; the present bit has the minimum length of three and one-half inches, and is not considered sufficiently powerful; the addition of one inch in length is recommended, making a total length of lower branch of four and one-half inches.

A straight lower branch is also recommended. It is more easily cleaned and presents a neater appearance. The lower branch should have a small ring for the attachment of the lip-strap (see any commercial pattern).

The curved lower branch of the present bit is not curved enough to prevent the horse lipping the lower branch. The lip-strap is the best arrangement to prevent this vice, and absolutely prevents a horse turning over the bit by throwing the head. It also retains the curb chain in the chin-groove. The present very satisfactory curb chain should have a lip-strap ring at its center.

The board also recommends that half buckles with leather keepers be used. Long ends of straps will then be confined, and the bridle will present a much neater appearance.

The snaffle reins should be a trifle wider than the curb reins, and both must be of thin, soft leather. Two pairs of the present issue reins make too much of a handful.

Hereto attached is a very concise discussion of bits and bitting from "Horses, Saddles and Bridles," of General W. H. Carter. These principles are recognized as correct by all authorities on the subject, and the board submits them, inviting attention to the fact that they are studied by all young officers in garrison schools. These theoretical principles, however, can never receive practical application with the sizes of bits now furnished.

Attached are also a few extracts on the subject of bitting, taken from prominent writers on horsemanship, most of whom have devoted their life work to the subject.*

The board, in conclusion, is of the opinion that the bit and bridoon is the most satisfactory solution of the bit problem, and, further, that the particular bit and bridoon best adapted for the cavalry service is of the *exact* pattern forwarded herewith, with this *one* exception: the bridoon mouth-piece should be five inches instead of four and one-half inches. There should be but one size of bridoon issued to go with any sized bit.

*Attached extracts not given as they are practically covered by the article in the October, 1905, JOURNAL, "Bits," page 331.

COUNTY FAIR CAVALRY.

By AN UNKNOWN CONTRIBUTOR.

COOGAN was a remnant left over from "the old army." He had seen his ups and downs, had known the privileges of chevrons and the humiliation of reduction; but, through all his alternating successes and failures, bore himself constantly like the natural philosopher that he was. Nature had endowed him with a power of observation that searched every passing fact with pitiless accuracy, and separated sham and show from the plain, sweet truth with ruthless decision. Could the comments of this Irish soldier-philosopher have been completely preserved, the General Staff would have had at its disposal a mass of army criticism well worth consideration by the most capable of its "divisions."

I remember when I joined my regiment and troop as a second lieutenant, how the sharp eyes of Corporal Coogan seemed to search through the thin disguise of such military attainments as I possessed. But I learned to appreciate the old fellow's strength and allow for his weaknesses through the years which led up to my promotion to first lieutenant and finally to captain of the same troop. Then came several years of detached service, at the termination of which I rejoined and, by a fortunate transfer of captains, was again assigned to my old troop, finding Coogan the solitary "old trooper" among many first-enlistment men and a few of two and three enlistments. Coogan—now First Sergeant Coogan—on a quiet afternoon in the orderly-room, encouraged by my many references to the troop in the old days, launched forth on a review of what he called "county fair cavalry." It seems that the troop had been sent during the preceding summer to several county fairs, as a sort of attraction to help out the fair managers. In fact the whole regiment appeared to have shared in this "duty," and the soldierly Coogan seemed to have jotted down all the distressing circumstances of the summer's campaign.

"Dy'e see, sor, it's like this. Things ain't at all like they used to be in the army, whin the Captain was wid us befoor. The Captain remimbers thim days whin cavalry was thrained to ride hard and shoot straight wid the idea of beatin' the inimy—ayther by smashin' him wid a charge or cuttin' him to pieces by our carbine fire And now, faith, sor, and its humiliatin' to tell the Captain what we've been doin'."

"Go on, Coogan, tell me all about it," I said, "your years of service and your ability to tell the truth entitle you to be heard."

"Well, sor, dy'e see, sor, it was like this: Last summer was the worst of all. The troop was new—'tis always new these days—and we had just bin filled up wid a boonch of new recroots—a choice lot of juvenile crooks—shweepins from the Bowery, togither wid some physical wricks of Frinch Canadians carefully culled by the painstakin' recrootin' officers from the blue bloods of dear old New England. 'Twill take all the foine days of this whole summer, and thin some,' says I to meself, 'to make soldiers of this boonch.' The Captain will remimber the ould days whin we spint days and days, and wakes and months hammerin' such material into shape, and niver troostin' thim wid spurs and a curb bit till they knew somethin' about stickin' on the top of a horse. Faith, sor, but last summer we had thim rookies ridin' foine and dandy in parades, yankin' and jabbin' with bit and spur, and rooinin' the poor horses before they had bin in the service two wakes. 'The people demand it,' says the post commander to our captain, 'and we must get the soldiers out, whether they are trained or not, to please the people—the real rulers of the country,' says he. 'Divil take the people,' says I to meself, 'tis damned little they have to do wid rulin' this country, though they may rule this rigimint.'

"But, sor, 'twas the county fairs that killed the spirit of manny a soldier like meself, and—beggin' pardon for speakin' this way—'twas manny a foine officer I saw last summer swallowin' the bitter medicine and looking black at the humiliation business. D'ye see sor, 'twas like this: We'd go off on a practice march wid some county fair fur our distination. Loike as not we'd go on a railroad train—the county

fair a payin' our expinses, and all the railroads makin' money by runnin' excursions to the fair. They had us advertised around the counthry loike any ould Woild Wist Buffalo Bill show. In one town a street car company, usin' the admirable and patriotic impulses of the local Congrissman, workin' on the War Department, secured our troop as an attraction fur their park. And there we were, sor, a troop of United States cavalry workin' for that damned street car company in their dirthy ould park, loike anny other 'attraction,' Our camp was jammed up in a dusty corner of the grounds, wid dusty roads and a line of saloons on two sides and a Woild Wist show on another. Not fur away were the 'Merry-go-round,' 'The Great Egyptian Fortune Teller,' 'The Sword Swallyer—the Human Ostrich,' 'Jim—the Candy Man,' 'The Loop the Loop,' 'The Wonderful Three Headed Calf,' 'Do Do, the Dog-faced Boy,' and cheap fakirs till ye couldn't rest, sor. All around the town ye'd see bills stickin' around, callin' on the good people to come out to the street car company's park to see these wonderful attractions, the greatest of which was, in the biggest toipe on the bill: 'Special Attraction—Troop of United States Cavalry—Two performances daily.'

"'Tis loike a horrible dhream, sor, to think of all that now. 'Twas a scheme to 'popularize the army' I'm told. Faith, and about two more summers loike last and the army will become the laffin' stock of all th' roober nicks in the country—and small wonder, sor, small wonder; shure and the world has always laffed at mounte banks and travelin' performers. And the great cryin' pity is, sor, that half the people won't believe we're reglars. Think of it, sor, the ould Twintieth Cavalry losin' caste, after all its fitin' on the plains, in Cubia and in the Phillypines. But these rubes say 'Shure, ye ain't regulars, are ye? Why ain't ye at yure post, drillin' and shootin'. We're glad to t'see you, boys, but we didn't know Uncle Sam hired ye and trained ye to go gallyvantin round to the county fairs. They ain't nothin' ye can do on these here gounds that'll help ye lick the Japs.'

"'Tis very well, sor, to talk about 'popularizin' the army' but 'twill be well to remimber also that 'familiarity breeds

contimpt.' I'm allowin' two more summers of 'county fair cavalry' to change popularity into contimpt, and that'll be our finish—and the army niver will git a dacint appropriation after that. At the fairs last summer the roober-nicks gave us a divil a bit of rist or privacy wid their pryin' curiosity and familiarity. Like bees they swarmed around and even inside our very tints. We ate our meals near the kitchen shack, sittin' around on the grass. Save us, if the haythen jays didn't crowd around us as if we were that many strange animals bein' fed. They even sthepped upon our plates and meat cans in their polite American curiosity. Maybe experiences and treatment like that is calculated to make a dacint, self-respectin' soldier re-enlist—and maybe it ain't. Wanst, thinkin' to ate in peace, I took me chow into me tint and let down the front flaps, but no sooner was I started eatin', when me tint flaps was pulled open by a female. 'He's eatin', girls, come quick,' she yelled, and soon the front of me tint was filled wid female creetures. Under loike circumstances, Private Flannigan was takin' a bit of a bath the same day, sor, in his tint, wid niver a rag on him, sor, whin his tint flap was pulled open by wan of thim female roober-nicks. 'Hivens, what's he doin',' she gasped, droppin' the tint flap and scamperin' away widout callin' the other girls. 'Popularizin' the army' says Flannigan, scrubbin' and scrubbin' away.

"And quite frequently, sor, our officers was thrown socially among a foine class of citizens. I remember one afternoon at Blundertown, we were makin' camp in the fair grounds and I was standin' near the lieutenant who was in charge, the captain bein' away. A great big, red-faced booze wreck of a hobo comes up to the lieutenant: 'Loot.,' says he, 'come across the street to the Red Lite Saloon,' says he, 'I want ye to meet Mistress Annie Mick, proprietress of the saloon; she's a perfect lady.' 'Wid pleasure,' says the lieutenant, thinkin' a bit, 'I'll be pleased to mention to this saloon-keeper something about treating our soldiers properly; perhaps I'd better meet her.' And so the lieutenant wint across the street, very dignified like, and was ceremoniously introjuced to the lady proprietress of the Red Lite Saloon, two barkeeps and one whisky drummer.

I was follerin' the lieutenant meself, thinkin' to be near if needed, and, comin' up, I heard a patron of the place, leanin' against the bar, say to the lieutenant, 'I knowed ye was a lieutenant, for I am myself a member of the Uniform Rank,' says he. 'Very fine, very fine,' says the lieutenant, bowin' himself out of the place wid a smile. At this same town whin we was unloadin' from the cars, wan rube says to the captain, 'Hey, Cap,' says he, 'does one man command this here mob?' 'I'll have you understand this is no mob,' says the captain, 'this is a troop of cavalry.' 'Be you boys Kansas cavalry?' says the rube. 'No, damn it,' says the captain, 'this is United States cavalry.' 'Now, young fellow,' says the rube, 'ye can't fool me, ye ain't regulars, for they don't send regulars round to show off monkey bizness. Regulars can't spare the time from their target practice and real military work. Regulars is expensive to maintain and now-a-days they hev to tend to bizness strictly and seriously like other folks. The summers is none too long for them to get in all their work without wastin' time travelin' to fairs. You can't fool me, young feller, ye ain't regulars; leastwise if ye was we all would feel like speakin' to the authorities about you runnin' around this way wastin' time that belongs to bizness.' 'Oh, hell,' says the captain to himself, 'I wish I could resign and quit this farce.'

"Another time, an old rube sez to me, 'Where do ye hev yer winter quarters?' he says, 'or do ye travel all the summer and go south in the winter? Ye won't make much money to-day, for they ain't many of the folks a comin'. But to-morrow ye'll hev a big crowd, and I reckon that'll make ye all feel good. Reckon you fellers is fond of big gate receipts same ez all show men. And where do you show next? Ye ought to go tew Bundy Creek, shure. My boy Bill used to be with "The Kickapoo Indian Medicine Company" run by Doctor Delooloo. Bill had charge of drivin' the pegs fer the tent. He said the Doc made lots of money sellin' medicine tew the people. I reckon you all hez things tew sell after yer get the people worked up with yer show, hey? Bill said the people liked their show because they did lots of ridin' and shootin'. I reckon you all hev plenty of

blank catridges, ain't ye? This is the first show I ever see,' he sez, 'with all the men dressed up like soldiers. A new idea with show men, I reckon. Me and my wife went to visit the big army post in this State last summer, and you fellers can be glad you ain't real soldiers, for I tell you them fellers hez to do real work. They certainly was busy firin' on the rifle range, drillin' and maneuverin', trainin' horses and gettin' ready fer long marches. Some of them said their colonel only had one idea in his head, and that was to make his regiment the best in the army. Looked to me as if he had the right idea, fer a soldier. You fellers is more like our home boys—all ye do is to show off.'

"'Twas agonizin', sor, to listen to that ould whiskers, but it was the truth he was givin' me, and ivery man, sor, should listen to the truth whiniver he hears it, and furthermore, he should think long and ponder over it."

"Well, Coogan," said I, "you certainly feel deeply on that subject. Perhaps the War Department will put a stop to this county fair business, now that they have tried it."

"Sure and that would be a blessing to the service," said Coogan. "But 'twill be hard to stop, now, for all the county fairs in fourteen States is quarrelin' over gainin' possession of cavalry troops for cheap attractions. 'Tis looked upon as legitimate graft, the government bein' the only loser, and only the officers and min bein' imposed upon, and the divil knows they don't count. Even the Congressmen is fitin' over this new graft. Says Congressman Skin to the post commander, 'Don't ye dare sind wan of yer troops to anny county fair outside of me own district. Me constituents is entitled to all the amusements which I control,' he says. 'Me own county fairs object to yer troops furnishin' amusement to rival fairs. I'll have no more of it,' says he, wid all the authority of a commanding general. 'It is me dooty to insure me own renomination,' says he, 'and you and your troops can help by keepin' me constituents laffin' and in a good humor,' he says."

And then, just as the disgusted Coogan started on another long period, we heard the call for afternoon stables, and the observations on "County Fair Cavalry" were closed.

ORGANIZATION OF PHILIPPINE SCOUTS.

CAPTAIN R. D. WALSH, NINTH CAVALRY.

IN approaching this subject it will be to our advantage to glance at the history of the Philippines, in order to correct the general impression that the Filipinos are a rebellious people, and that they will rebel against any government. Their history may be divided into three periods: before the discovery by Magellan, from that time until 1868 (the opening of the Suez Canal), and to the present time. Of the first, little is known except that the natives, under petty chiefs, lived along the coast line and were not civilized. During the second period they were generally contented and happy, and advanced rapidly in civilization. The third period was marked by the Cavite insurrection, the rebellion against Spain and that against the United States. The first was of no moment and localized, the second was extensive and the third general.

In speaking of the second period as one of contentment and progress, I do so with a full knowledge of the many so-called rebellions. When these are studied, it will be found that they were generally incidental to the occupation of a new territory peopled by an uncivilized race, and in many instances were similar to our Indian wars. When not of this character, they owed their origin to religious fanatics, but the two were often combined. They were invariably suppressed by native troops. The largest of these rebellions occurred during the English occupation of Manila, and was fomented by Diego Silan, who claimed to have had personal interviews with the Savior, and called himself Cabo de Jesus Nazareno.

The Oriental character differs from ours; but men of all creeds and nationalities respect justice and its prompt administration. The Caucasian is the only one who fully appreciates mercy. Other races seldom protest against a sentence

greater than that merited by the crime. To have its full effect the trial and punishment must follow swiftly the commission of the crime. The Asiatic is an adept in the fabrication of false charges and testimony, and in the production of false witnesses. The Arabian Nights contain examples of this, and the Just Cadi is the one who exposes the unjust accuser. This trait is absent in the character of the American Indian, and seldom appears in that of the Ethiopian or Caucasian.

The contentment and progress which, until 1868, prevailed under Spanish rule, was due to the government of the towns by the priests of a religion, which religion was well suited to govern a people of that faith, and who possessed little knowledge of the outside world. It is useless to enter into a discussion of the government by the fr ars, but all acquainted with the subject will admit that through their religion and their presence in each town, the fact that crimes were committed came to their knowledge, and that they possessed the power of bringing the criminal to justice.

During the past seven years the Philippines have been controlled first by the military government, and then by the present civil government. During the military government active hostilities existed, and the army was handicapped in its government, as the country was alien to it in customs, manners and mode of living. Its language was a foreign one. Could the native troops in the Spanish service have been incorporated with our army in 1898, the insurgent forces would have been deprived of their best troops, and we would have had a force upon which we could have relied, and the conduct of the war would have been different. The small American force at first operating in the Islands necessitated frequent movement of troops from one station to another. This was unfortunate. The employment of a large secret service fund would have improved the feeling between the troops and the natives, and the war would have been brought to a timely end. After 1899 the problem was not to conquer the enemy, but to identify him.

The establishment of the civil government when the country was not completely pacified was premature. Per-

haps this was due to a supposed political necessity or movement. We manifested no such haste in restoring civil government throughout the Southern States in 1865. The general mass of the Filipino people was adverse to the removal of troops from their towns. One reason was that the troops spent their pay among the small merchants; but the principal one was that it left the people at the mercy of native officials. The Americanista was abandoned, and former insurgents generally filled all places in the local governments. Up to the latter part of 1899, with few exceptions, the wealthy class had not affiliated with the insurgent movement; all the criminal class had. The wealthy class would have remained loyal to the Americans had they not raised the price of labor, and had they carefully distinguished between friends and foes. All except the active insurgents dreaded the local governments being placed in native hands. While the insurgents were supreme the towns had experienced such a government, and a study of the government of the various towns by the insurgents in 1898–9 will convince anyone that as examples of overbearing tyranny and arbitrary misrule they are not excelled in history. Their records are those of robbery, sequestration, rapine, assassination and murder.

Not often does a conqueror at once institute civil government in conquered territory; even when, according to the rules of war, he permits local officials to continue the exercise of their functions, it is under the supervision of military authority. Under military supervision we installed local governments in the pueblos, but when the control passed from the military, these local or town governments were, with the exception of an occasional visit from the provincial governor, left to themselves. That their authority was invariably used for the benefit of the people, and not to further the private interests or gratify the private vengeance of the presidentes, few will contend.

The history in all uprisings in the Philippines is similar. The discontented, at first few in numbers, were invariably joined by the criminal class en masse. Then through terror the peacefully inclined were forced to join their ranks.

Or some fanatic, representing that he was acting for the Lord, prevailed on many to join through religious enthusiasm. The higher classes had few representatives among the rebellious ones; but these, partaking of the enthusiasm, often willingly sacrificed life and property. The attitude of the common people to any policy is one of indifference. In all matters they are ruled by the principales or by the criminal class. Each of these rules by terror. The common citizen amounts to nothing, and will continue so until he is assured of permanent protection from these two classes.

When a savage, aided by a civilized race, progresses through various stages towards civilization, there comes a time when the controlling or uplifting force must transfer part of its authority to the other race or there will be no further advancement. This may be said to be the beginning by that race of self-government, and this government to be successful must be inaugurated in the municipalities and townships. If, before the citizens of these municipalities and townships are thoroughly founded in the principles of citizenship, the controlling force is removed, progress will cease. Until 1898 the government of the Philippines was patriarchal, and at least 200 years behind that of a modern civilized state. In a patriarchal government the members of the community have no say in forming its rules, no vote in determining what shall or shall not be done. Though the Philippines had local town governments, they were so only in name. The friar was the local government. Not one man in fifty understood or cared about his rights as a citizen. This is still true. We removed the controlling force and in its place the principales reign. Roughly speaking, the Filipinos may be divided into principales and common men. The former do not believe they are made of the same clay as the latter, and regard them as inferior, not entitled to any consideration. The principales are vain, haughty, often with a superficial education, personally ambitious, and anxious to shine in the glare of lime-lights. There are exceptions to this classification, as some few are men of ability, deep thinkers, and in every way worthy men. The common hombres are hard working, kind to their families, hospitable,

generally law abiding, and possessed of many good traits. They are ignorant, and thousands of years of caciqueship have thoroughly grounded them in implicit obedience to the principales. It is against such a people, alien in customs and manners, that we have suddenly hurled all the blessings of the most enlightened citizenship, founded upon the perfect equality of all men. Will they be able promptly to digest this, or must they first pass through an intermediate stage, and if so, what steps must we take to instill our principle of equality, and what should be our first form of government?

Among an alien people, as far advanced as is the Filipino in civilization, a military-civil government is the best, and this should slowly and slowly, and gradually and gradually, be superseded by one entirely civil. Such a people respect force; a military government is prompt and just. The officers have had previous experience with the people, and seldom form business ties. A military government should not supersede the town local governments, but it should work alongside of and in cooperation with such governments. Its function should be to elevate the tao, and keep him from being a pawn in the hands of the principales. In other words it should work to make life and property secure. When this is done, we will have no further trouble in the Islands and they will advance rapidly both in commerce and industries.

To secure the safety of life and property it is necessary that the knowledge of crimes committed should come to the authorities, that the criminal should be identified, and that the authorities should not shield the criminal. American troops cannot do this, and they must be aided by natives, employed either as police or as scouts. The former will always be under the control of the presidente, while the latter can be controlled by their officers.

The native troops now serving in the Islands are organized as constabulary and scouts. It is hard to understand why there should be a distinction and two separate armies maintained. The constabulary can not be classed as militia. They are constantly moved from province to province and from island to island. They are permanently maintained and armed, fed, clothed and paid by the civil government

while side by side is another colonial army (the scouts) maintained by the United States. There should be no separate armies or separate governments. The United States should be the government and the Governor-General should be a vice-president in the true meaning of that word. He should be at the head of the military as well as at the head of the civil power, as the President is in the United States. Many of the powers of the latter should be delegated to him, for it is hard to govern, and govern well, at the end of a string 9,000 miles long. All talk of independence in the Islands is nonsense for at least fifty years. It is fomented by the young shoe hombres and a few of the wealthy men of the upper class to forward their personal interests. These are aided in the United States by people who are ignorant of the principle they so readily support. Some of them may have visited the Philippines, but they know nothing of the lives of the common people. They are ignorant of conditions which existed in the provinces under the insurgent government. The chances are one to ten that they have never had five minutes conversation with a bare-footed hombre; and if so, it was through an interpreter. Let them live months or years in some town, let them learn something of the language of the people, and their views will change.

If the Philippines were rich and had large revenues, enabling them to maintain many and good officers, the constabulary might be retained; but these conditions do not exist. The scouts should be retained and, in addition to their present duties, they should be auxiliary to and aid the local town governments. It is among the lowly that the United States must work if it desires to raise the people. The rich and criminal must be taught that the people are not their slaves, whom they may move at will; and that the common people cannot be forced to deliver their property to them, or pay the penalty for disobedience with their lives.

A regiment of native troops should consist of one colonel, one lieutenant colonel, three majors, fifteen captains, one chaplain, sixteen first lieutenants, sixteen second lieutenants, one sergeant-major, one quartermaster sergeant, one commissary sergeant, three battalion sergeant-majors, two color ser-

geants, one band and twelve companies, organized into three battalions of four companies each. The organization of the regiment and the duties of its officers should be the same as in a regiment of infantry of the United States army, and the officers should receive the pay and allowances of the corresponding grade in that service. No extra pay for foreign service should be paid to any officer of a Philippine regiment while serving in the Philippine Islands.

Each band should consist of one chief musician, one principal musician, one chief trumpeter, one first sergeant, one quartermaster sergeant, six sergeants, eight corporals, and eighty-one privates. It should be equipped and drilled for field service. Each company should consist of one captain, one first lieutenant, one second lieutenant, one first sergeant, one quartermaster sergeant, six sergeants, eight corporals, two musicians, and eighty-four privates.

Of the officers herein provided for, the field officers should be detailed from officers of the regular army above the rank of first lieutenant, and the captains from the lieutenants of the regular army. The detail of officers for such service should ordinarily be limited to a period of two years. The lieutenants should be selected from the enlisted men of the army, officers or soldiers honorably discharged from the regular or volunteer service, and from natives of the Philippine Islands of honorable record. Lieutenants should be commissioned for a period of three years unless sooner discharged.

The enlisted strength should be composed of natives of the Philippine Islands, but no regiment should be composed exclusively of natives of a particular section or tribe. The term of enlistment should be for three years.

Enlisted men of Philippine regiments should be paid as follows:

Regiment.	
Sergeant-major	$34 00
Quartermaster sergeant	34 00
Commissary sergeant	34 00
Squadron sergeant-major	25 00
Color sergeant	25 00

Band.	
Chief musician	$60 00
Drum-major	25 00
Principal musician	22 00
Chief trumpeter	22 00
Sergeant	18 00
Corporal	7 50
Private	6 50
Troop.	
First sergeant	$25 00
Quartermaster sergeant	18 00
Sergeant	18 00
Corporal	7 50
Trumpeter	6 50
Private	6 50

While serving in the Philippine Islands there should be no extra pay for foreign service paid to enlisted men of Philippine regiments. In addition to their regular pay, one dollar per month should be paid for each five years' previous service. When an enlisted man had served for thirty years he might apply for retirement, but service in the Philippine Islands should not count double towards such retirement.

The allowance of clothing to each enlisted man should be $96.00 for each enlistment of three years, distributed as follows: Four dollars per month during the first year, $2.00 per month during the second and third years.

At some suitable military post there should be organized a military school for the instruction of native cadets, with a view to their appointment as commissioned officers to scout regiments. At date of appointment as cadets they should not be over sixteen years of age, and should serve from four to six years as cadets. While under instruction they should receive sufficient pay to meet their expenses. The number of cadets should not at first be large, but should be increased gradually.

There should be attached to each native regiment seventy selected enlisted men of the army, who should have the rank of sergeants. Of these, five should be attached to each company and band, and five to regimental and battalion headquarters. While serving with native regiments they should receive the pay of their grade, and in addition $15 per

month. They should be considered as a casual detachment of the Philippine Division.

The pay of the corporal of the army, including the ten per cent. increase for foreign service, is $16.40, and a private $14.30. In a regiment of native troops there would be 104 corporals and 1089 privates. The pay of a native corporal would be $7.50 and of a private $6.50. Therefore the annual pay of a native regiment would be $113,000 less than a regular regiment of equal strength. The additional pay for the American noncommissioned officers would be about equal to the difference between the annual clothing allowance of the scout regiment and a regular regiment. There would also be a saving in rations and transportation, and we may assume that a native regiment would cost about $150,000 annually less than a regular regiment of equal strength.

This proposed organization differs from the present one in the following respects:

1. Providing a regimental organization with a full complement of field officers. No matter what his nationality or race, the soldier regards his regiment with pride. Field officers can be spared from regular regiments, but they are all needed with native troops. The Filipino respects high rank, and a colonel will have more influence than a major. A regimental formation gives an air of permanency to the organization; and constant supervision of young and untrained officers is necessary in a country like the Philippine Islands.

2. The founding of a cadet school for the education of native officers. Graduates of this school should hold their commissions during good behavior. On graduation they should be appointed to a regiment as second lieutenants, and after serving a number of years should be promoted to first lieutenants and then captains. Promotion to the grade of field officer should be by selection, or all promotions may be by selection.

3. The creation of bands numbering a hundred pieces. The number of first and second lieutenants is placed at sixteen, and the two extra lieutenants are for service with the band. *It should be drilled as a company*, and at any time available for field service as a company. These large bands would

react favorably on the people. They are all musicians, and troops with such bands would be looked on with favor. In the Orient the spectacular is everything to the populace. At first glance the establishment of these bands may appear trivial, but the subject is one of importance.

4. Sergeants are paid the same as those of like grade in the regular service, which may be considered as double pay. The object of this is to fill these positions with natives who are above the ordinary in intelligence and standing. This makes their position a desirable one; so much so, that the occupant will use every endeavor to retain it.

5. Attaching American noncommissioned officers to each regiment. When used as a military force they will improve a regiment, but when scouts are sent out in small detachments or when the force is scattered for police purposes, these men will be invaluable. The number is placed at seventy, so that detachments may always be accompanied by an American. The Filipino is a born extortioner. He firmly believes that an office is created to make out of it the most possible. When crossed he is cruel and vindictive, and has a long memory.

Some objection may be made to paying enlisted men of the United States army the extra pay of $15 a month. These men will at times be required to mess by themselves, and they should always be neatly dressed. The amount suggested is believed necessary to cover the extra expense. Promotions to commissioned officers should generally be made from among these men.

I believe that with a number of American soldiers attached to these regiments the bad features connected with the use of native troops would disappear, and that the service obtained from them will fully meet present conditions. The Filipinos are a conquered people, and have suffered so much from war and pestilence that all they ask is security and protection for their lives and property.

The disadvantage of such a regiment is the frequent change of officers. An American serving in the tropics should, at the end of every three years, leave them for a year. Continued residence in the tropics dulls the moral sense and enervates the physical. There is no reason why

good officers should not serve again after a year's absence; and their service as scout officers should count in computing their service towards retirement should they elect to reënter the regular army.

In the administration of justice, criminal cases of importance are now brought before courts of the First Instance, which courts have sixteen American and seven Filipino judges. Capital cases are tried before these courts, but before a death sentence is carried out the *proceedings* are reviewed by the Supreme Court. I am not prepared to make any statement in regard to the workings of these courts, but have often wondered what were the sensations of a middle aged American lawyer when he first assumes his duties as judge (and also jury) in a court of the First Instance. Does he render his decisions according to the testimony, or does he soon realize his position, and are his decisions influenced by representations from interpreters and other native court officials? A military commission is a better tribunal than a judge of this class for the trial of criminal cases. It has three members, all of whom are more or less familiar with the native character; and three in the case of false testimony, are more apt to detect its flaws than one. Generally the members of a commission have some knowledge of Spanish; and often one or more a knowledge of the native dialect. This acts as a restraint on the interpreters. Perhaps a commission of five members, two of them native officers, would be still better.

We must regard the great mass of the Filipinos at the present day as possessing many of the attributes of civilization, with a small upper class as civilized. Among the majority the proportion of hard working, industrious men and women is large; but they are entirely controlled, through fear, by the upper and by the criminal classes. I was present at an election for municipal officers, in a town of 6,000 people. Seventeen votes were cast, all alike. In 1901 when the *partido federal* was formed, I questioned several natives among the hundreds who had just signed the rolls and taken the oath of allegiance, and only two knew what the object of the meeting was, and that in an indistinct

manner. The others had signed and sworn because they had been told to do so. It would be impossible to find out the true standing of the populace on any question. The chances are the majority would not care and would not understand it; or the prominent citizens would tell them that by voting a certain way they would be personally benefited. Any proposition to which was attached a mule and 160 acres of land would, if favored by the principales, carry the Islands by a majority of at least a million.

During at least the last half of the late insurrection the problem presented to the American troops was not to conquer the enemy, but to identify him. The same problem exists to-day, to exterminate the so-called ladrones. The word ladrone means a thief, but is now applied to any small or large band of men organized for any unlawful purpose.

The native is the only one who suffers at the hands of these outlaws, and ordinarily, if afforded permanent protection, he is willing to identify them. The ladrones are persistent in their revenge, and so far only temporary protection has been given those who informed against them. In Spanish times the native troops remained loyal, and there is no doubt of their loyalty when it is to their personal interest to remain so. These troops can go amongst their countrymen without exciting suspicion, but the ladrone is always watchful in the presence of Americans.

To say that ladrones have always existed and always will exist is nonsense. They can be cleaned up. Thieves will always exist, but that they shall be able to form large bands and terrorize whole communities is contrary to common sense.

In conclusion, I would again state that in the use of these native troops as a police force it is not advocated that they should supplant the local or town governments. With a presidente honest in the discharge of his duties and willing to treat the rich and poor as alike before the law, they will be invaluable as an aid and auxiliary in suppressing lawlessness and bringing criminals to justice. Where the presidente is unjust or when he is leagued with criminals, the fact will soon become known and brought to the attention of his superiors.

CAVALRY EQUIPMENT.

By Captain CHARLES D. RHODES, General Staff.

OUR cavalry regiments are soon to be furnished with a rifle weighing 1.09 pounds more than the present carbine, and having 2.53 inches greater length. These considerations have led the writer to make considerable study of the weight and arrangement of the future cavalry saddle equipment, and he presents his notes to the service, hoping that free discussion and practical trial may bring about some improvement in the saddle-pack, if found practicable.

As a basis for any investigation of the subject, must be determined—

THE GROSS WEIGHT ON THE HORSE.

During the past few years a number of articles of equipment have been slightly increased in weight, so that with the advent of the new Springfield rifle the cavalry horse will probably carry ten or eleven pounds more than he did five years ago, disregarding the weight of the rider. This increased weight is principally represented by the new rifle, rifle-scabbard, olive-drab overcoat, and shelter tent.

The following weights in pounds are believed to be reasonably accurate:

Clothing on Trooper.—Campaign hat, .31; undershirt, cotton, .5; flannel shirt, 1; blouse, olive-drab, 2.56; drawers, cotton, .5; riding trousers, olive-drab, 1.5; canvas leggings, .81; shoes, russet, 2.06; socks, .25; gloves, .2; first aid package, .2; total, 9.89.

Equipments on Trooper.—Latest model ammunition clips and belt with suspenders, 7.625; revolver, caliber .38, 2.06; holster, .5; spurs and straps, .35; total, 10.535.

Packed Saddle.—Saddle complete, 17.3; saddle-bags, 4.2; saddle-blanket, 4.3; rifle, model 1903, 9.09; rifle-boot, model 1903, 2.81; saber and scabbard, 3.75; saber-knot, .2; surcingle, .75; overcoat, olive-drab, 8; bed blanket, 5; change of cotton underclothing, 1.25; shelter-half, model 1904, 3.125; one shelter tent pole, hinged, three-jointed, 1; nose-bag, 1.375; lariat and picket-pin, 3.3; canteen (empty) and strap, model 1904, 1; tin-cup, .56; meat can, .95; knife, fork and spoon, .38; currycomb, .65; horse-brush, .625; watering bridle, 1.1; total, 70.715.

Equipments on Horse.—Bridle and bit, 2.6; halter and strap, 2.6; total, 5.2.

Emergency Articles.—Two extra horseshoes, front and rear, 1.5; horseshoe nails, .25; side lines, 1.72; two extra bandoliers of ammunition, 8.50; one emergency ration, 1.26; one-half ration of oats, 6; total emergency, 19.23.

The gross weight on the horse, exclusive of weight of rider, will, therefore, be 115.57 pounds; or minus the emergency articles (19.23) not ordinarily carried, it will aggregate 96.34 pounds.

Comparing this with the weight of the ordinary equipment carried by foreign cavalry horses:

British	120 pounds
German	100 pounds
Russian	120 pounds
Belgian	111 pounds
Austrian	137 pounds

we find that, even with the increased weight of our equipment, we are well within the safety limit as to weight.

This fact proven to our satisfaction, the next point of interest is whether arrangement of our equipments on the horse is such as to bring out his maximum efficiency as a weight carrier.

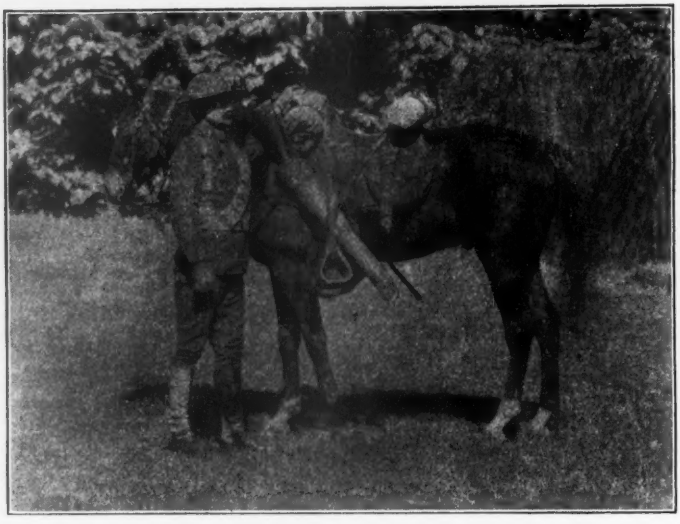
THE PACKED SADDLE.

The range, accuracy, and flat trajectory of the new rifle will certainly give our cavalry an immense superiority over antagonists armed with an inferior weapon. But its weight and length and their effect on the stability of the saddle-

pack, are factors which will have to be considered in future cavalry operations requiring mobility.

For some years the carbine has caused a decided preponderance of weight on the side of the saddle from which it is suspended.

This pull on the saddle has been more or less increased by the packing of the saddle required by Paragraph 289,



THE NEW U. S. RIFLE AND RIFLE SCABBARD SLUNG FROM THE NEAR POMMEL OF SADDLE.

Cavalry Drill Regulations, and will be increased to a greater degree by the new rifle and the new russet leather scabbard.

I have always believed this preponderance of weight to have been responsible for many cases of sore withers, and I believe cavalry officers who care to investigate the present authorized method of packing the saddle, will be surprised to learn that, whether the Krag carbine be carried on the near or off sides, an alarming discrepancy in weight exists which cannot fail to work harm on a fatiguing march. It goes without saying that a pull of seven or eight pounds on either the near or off side of the withers, will develop a see-

saw motion, almost certain to injure some portion of the horse's back.

In the following tentative arrangements of arms and equipments on the saddle, I have tried every reasonable combination which would insure stability and balance, and obviate any tendency to twist. The weight of overcoat, saddle, saddle bags, and rear pack are temporarily neglected, as being symmetrically arranged with respect to the center of gravity. The rifle and rifle scabbard considered are the latest models.

First Arrangement.

NEAR SIDE OF HORSE.	Weight.	OFF SIDE OF HORSE.	Weight.
Lariat and picket pin	3.3	Canteen and strap	1.
Meat can	.95	Tin cup	.56
Knife, fork and spoon	.38	Currycomb	.65
Rifle, model 1903	9.09	Brush	.625
Rifle scabbard, 1903	2.81	Watering bridle	1.1
		Saber and scabbard	3.75
		Saber knot	.2
		Surcingle	.75
Total	16.53	Total	8.635

Preponderance of weight on near side, 7.895 pounds. (With the Krag carbine and its scabbard the preponderance would be about 6 pounds.)

Second Arrangement.

Same as first arrangement, except that the rifle and scabbard change places with the saber, saber knot and scabbard, the latter going to the near side.

Preponderance of weight on off side, 8.005 pounds.

Third Arrangement.

Same as the first arrangement, except that the lariat and picket-pin exchange places with the canteen and tin cup, the latter going to the near side.

Preponderance of weight on near side, 4.415 pounds.

Further juggling with equipments will fail to obtain any satisfactory rearrangement better than the third arrangement above, with a preponderance of nearly four and one-half pounds on the near side. Moreover, this admits of the rifle

being carried on the near side, where it should be. I believe the rifle, which is our cavalryman's chief weapon, should be where he can most readily draw it from the scabbard, whether mounted or dismounted. The position of the saber on the horse is of secondary importance, and is not inconvenient on the off side.

THE LAING-HIBBERT RIFLE CARRIER.

To my mind the above preponderance of weight is a grave question, not so much perhaps in ordinary peace marches with regular troops, but with volunteer cavalry under inexperienced officers. It may be recalled that while the maximum number of cavalrymen in the field during the first two years of the Civil War was about 60,000, 284,000 horses were furnished this force. In Pope's Army of Virginia 3,000 horses out of 8,738 were reported as unservice-

able in July, 1862; and preceding the second Bull Run, Pope had 4,000 cavalrymen on paper, with but 500 horses fit for service.

The more recent Anglo-Boer War furnishes similar examples of the serious impairment of the mounted arm from sore backed horses, and accentuates the importance of the question of a properly packed saddle.

Harking back to our own saddle equipment, it is manifest that the whole question of weight preponderance hinges on where the rifle is carried; and without being an advocate of carrying this arm on the trooper, the matter is well worthy of consideration.

The question of carrying the carbine on the trooper is not a new one. It was quite exhaustively discussed by that splendid cavalry officer, First Lieutenant W. H. Smith, Tenth Cavalry, in the CAVALRY JOURNAL for September, 1890. Such an arrangement relieves the horse and ordinarily tires the trooper. But its greatest advantages are that, mounted or dismounted, the trooper and his rifle are never separated, and the dismounting of the trooper in no way affects the stability of the saddle, as is the case when a nine-pound rifle is withdrawn from its scabbard.

The German trooper carries his carbine on the saddle, but his weapon weighs but 6.83 pounds. The British trooper who normally carried his comparatively light carbine in a bucket or boot suspended from the right side of the cantle, has, since the Boer War, quite extensively experimented with the Patterson rifle carrier, by which the trooper bears a portion of the weight of the rifle. The Russian, Austrian, and Belgian cavalry carry the carbine on the trooper.

Let us see what the effect of removing rifle and rifle-scabbard from the saddle would have on the stability of the packed saddle.

Fourth Arrangement.

Same as second arrangement (saber and saber-scabbard on near side), except that the rifle is carried on the trooper, and the rifle-scabbard is discarded.

Preponderance of weight on the near side, 3.895 pounds.

THE PATTERSON RIFLE CARRIER.
(Front view, dismounted.)

Fifth Arrangement.

Same as fourth arrangement, but saber, scabbard and knot on the off side.

Preponderance of weight on the off side, 4.005 pounds.

Evidently these two preceding arrangements of equipments furnish no better solution of the question. But, suspending saber and scabbard from the near side, and exchanging lariat and picket-pin with the canteen and tin cup, we obtain better results.

Sixth Arrangement.

NEAR SIDE.	Weight.	OFF SIDE.	Weight.
Canteen and strap	1.	Lariat and picket pin	3.3
Tin cup	.56	Currycomb	.65
Knife, fork and spoon	.38	Brush	.625
Meat can	.95	Watering bridle	1.1
Saber and scabbard	3.75	Surcingle	.75
Saber knot	.2		
Total	6.84	Total	6.425

Preponderance on near side, .415 pounds,=7.68 ounces.

One of the foreign methods of carrying the rifle on the trooper, which is described because it is typical of the usual equipment of this character, is that known as the Laing-Hibbert equipment of British manufacture. The rifle passes from the left shoulder through a loop on the leather shoulder belt to a point in rear of the right hip,where it is secured to the belt by a small strap passing around the small of the stock.

The great disadvantage of the above method to American cavalry officers, is of course the discomfort and fatigue to the trooper. As a compromise between carrying the rifle on the horse and on the trooper, Lieutenant-Colonel Patterson of the British army has devised the Patterson rifle carrier.*

This device consists of (1) a belt frog, (2) a saddle frog.

The belt frog consists of a loop and short sling strap with hook, located on the waist belt behind the left hip. The saddle frog consists of a steel grip, riveted to a flat piece of

*Described briefly in the "Bulletin of Military Notes" (M. I. D. No. 3, June 30, 1904) and in "Translations Pertaining to the Boer War" (M. I. D. No. 4, April 1, 1905.)

THE PATTERSON RIFLE CARRIER.
(Side view, dismounted.)

leather fastened below the near cantle of the saddle. The rifle is passed through the loop attached to the shoulder-belt and the small hook attached to the trigger guard before mounting. This holds the rifle in a slanting position behind the back, the stock falling below the left hip. Upon mounting, the small of the stock rests naturally opposite the near cantle, where it is grasped with the left hand and pressed firmly into the steel grip or frog. In dismounting, there is no necessity for disengaging the rifle from the saddle-grip, as the motion of the body releases it. Similarly if the trooper falls or is thrown, the rifle goes with the man. This is said to have been tested repeatedly by the inventor and others, without resulting in "hanging" the trooper to the saddle.

The inventor claims among other thing, the following advantages for his carrier:

The rifle is always attached to the man, so that if suddenly separated from his horse he is not left defenseless; the trooper can mount or dismount without handling the rifle; the position of the rifle is said to be very comfortable to man and horse; the saber or pistol can be used as freely as if no rifle were carried; the rifle protects the back from possible saber-cuts in the mêlée.

Lord Kitchener has recommended the carrier for all British mounted troops in India; Major-General Baden-Powell has ordered a number of sets for the South African Constabulary; and the British Inspector General of Cavalry has recommended its adoption for the Canadian mounted troops. So that it is apparent the device is beyond the experimental stage.

In November, 1904, the Patterson equipment was tested at the Rock Island Arsenal, and report made as follows: The device was comfortable, the weight of the rifle being principally carried by the saddle-frog; in dismounting forward or on the near side, the rifle was released by the motion of the rider, but it was claimed that in dismounting on the off side the rifle hung, and required the trooper's hand to aid its release from the saddle-frog. Adverse report was also made as to the delay in changing the reins from the left to the right hand after mounting, in order to press the

THE PATTERSON RIFLE CARRIER
(Mounted.)

rifle stock into the frog. It was also claimed that the device would require a leather waist and shoulder belt, and hence entirely change our present belt.

Some of these objections appear negligible except the claim that the rifle "hangs" in dismounting to the off side, and the inventor claims that with proper equipment this cannot take place. Press reports state that the 25,000 Patterson rifle carriers furnished the British Indian army have not given complete satisfaction, but that they have developed no fault that cannot be remedied.* The British cavalry serving at home is to be furnished with a rifle-boot or scabbard very similar to our own, but weighing two and a half pounds.

It appears to the writer that unless it works injury to the horse and affects our mobility, it is quite desirable that we should retain our present method of carrying the carbine mounted. Practical test under actual conditions of field service will alone demonstrate whether the old method will be entirely practicable with the new rifle; and the purpose of these notes is to call attention to the importance of this question, so that all cavalry officers may give the matter special study, after receiving the new firearm.

THE REAR SADDLE PACK.

Whether the rifle be carried in a boot or scabbard passing under the trooper's left leg, or whether experience during the next two or three years shall force us to carry it in some other way, there appears to the writer some changes in the rear pack which might be beneficial.

The present rear pack with equipments attached to cantle rings (Cavalry Drill Regulations, Paragraph 289) have the following disadvantages:

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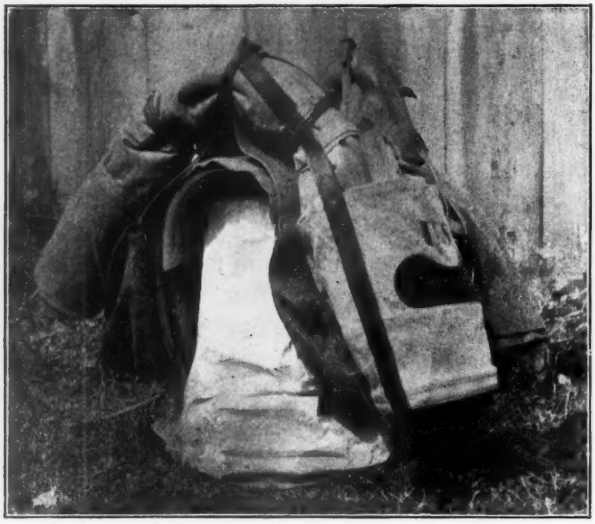
*On February 22, 1905, Mr. Arnold-Forster stated in the House of Commons: "I understand that the Patterson equipment is used by a portion of the Indian cavalry. I believe that recent reports show that there is some doubt as to whether the pattern adopted is satisfactory from the point of view of durability. As regards cavalry of the British establishment, it has been decided not to adopt this equipment at present, as the advantages derived from its use are considered to be more than balanced by its disadvantages."

1. Center of gravity of the pack is, on account of its form, so high that there is a constant tendency to turn the saddle.

2. The high pack is an obstacle to easy mounting and dismounting.

3. There is no way provided by Paragraph 289 Cavalry Drill Regulations for carrying the shelter-tent poles. When ordinarily carried outside the roll and inside the rear coat straps, they often become lost. If carried within the shelter



EXPERIMENTAL CURVED REAR PACK.
(Right rear view.)

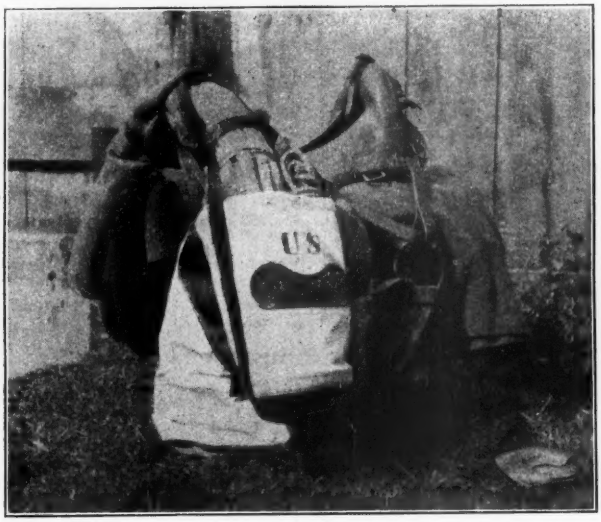
half, they wear holes and cause undesirable rigidity of the pack.

4. The canteen, tin cup and lariat pitch about and rattle unnecessarily, and the tin cup and picket pin reflect the sun's rays so as to be visible at great distances. These drawbacks have been much in evidence at maneuvers, and our Manchurian attachés have also drawn invidious comparisons between our rattling horse equipments (which they carried) and the silent equipments of foreign packs.

Some years ago with the old-fashioned knapsack, the in-

fantry soldier rolled his blanket into some such shape as our rear pack, and perched it high on his shoulders. He soon found it an inconvenient and fatiguing position, because from its height his center of gravity (his balance) was easily disturbed. He also found that a blanket roll about the body lowered the center of gravity and distributed the weight more uniformly.

With some modification it appears to me that this same improvement is applicable to our rear pack. Decreased in



EXPERIMENTAL CURVED REAR PACK.
(Side view.)

diameter to six inches and lengthened to forty-four inches, the rear pack may be made to curve gracefully over the horse's back, held to the saddle by the three rear coat straps, and bound near each extremity by the canvas roll straps attached to the shelter-half (model of 1904).*

*It was not until the writer had completed these notes that he came across the excellent article in the CAVALRY JOURNAL for January, 1904, by Captain George Vidmer, Eleventh Cavalry, on cavalry equipment. While Captain Vidmer does not advocate the curved pack, he demonstrates some of the disadvantages of the present high pack, and his long pack, broken in the middle, appears very practical and advantageous.

If the diameter of the roll be decreased to six inches, the nose-bag will not fit the end of the roll closely as before, but this seeming drawback is in reality an advantage, for the reason that if the nose-bag be placed over the off end of the roll, there is room in the nose-bag for the tin cup (at the end of the roll), for the shelter-tent poles and for the lariat (suspended from the off cantle ring). This arrangement keeps the shining tin cup out of sight and protects it by the thick nose bag, while the lariat can no longer swing about, and is also more or less hidden from view. On the near side, the curved pack keeps the suspended canteen from swinging about unduly.

To roll the rear pack, spread the shelter half (model 1904) roll straps underneath, turn in the triangular end flap, making the tent rectangular. Turn under the roll strap edge of the shelter half eight inches. Lay the entire blanket flat on the shelter half, shorter edge parallel to roll straps of tent, and one inch from its edge. Fold the two sides of both tent and blanket inward for eleven inches, or to points opposite the two inner roll straps. As a precaution against ends pulling out, pass the two exposed roll straps across and fasten to opposite buckles. Extra underclothing will be spread smoothly in the center of the roll. Roll tightly, using hands and knees, from the bottom of the roll towards the roll straps, and bring over the entire roll the part of the tent which was turned under, thus binding the roll. Buckle the two available roll straps about the roll, passing them around twice. The roll will then be about forty-four inches in length and six inches in diameter.

While the method of packing here suggested has quite likely many defects, and has not yet been given a test under service conditions, it will lower considerably the center of gravity of the saddle, and thus give increased stability, resulting in less disturbance of the position of the blanket on the animal's back. It will give a preponderance on the off side of about two pounds, the equipments being carried as in the sixth arrangement, before mentioned.

As with the present rigid pack, it will be almost equally necessary to keep the curved pack off the horse's spine, but

as the center of the roll is of slightly smaller diameter than the ends, the center coat-strap of saddle may be drawn quite tight, and thus hold the roll clear of the spine. It is rare that an experienced plainsman rolls his slicker or overcoat as a short, stiff pack. It is usually tied to cantle or pommel, the long ends swinging over the horse's back.

In conclusion, I desire to say that these suggestions are only intended as tentative. The question of saddle equip-

EXPERIMENTAL CURVED REAR PACK.
(Rear view.)

ment is always an important one for cavalry, and the sooner we begin studying the question as affected by the new gun, the better. My opportunities for practical trial have of late been limited, and I hope that officers with troops will take these matters up and report results.

In attempting to increase our fire action, we should not lose sight of the fact that *mobility* is our most valuable characteristic, else we lose our value as cavalry, and become indifferent infantry.

If there is one thing taught by the Russo-Japanese War, it is the utter ineffectiveness of the Russian cavalry, due in

a great measure to lack of mobility and initiative. To quote from the *London Times:*

"Encumbered with horses, the Russians were ineffectual as riflemen; and without lances, but encumbered with rifle and bayonet, they were ineffectual as cavalry. * * * They failed as cavalry and they failed as riflemen, and the reason of the failure was that they are neither flesh, fowl nor good red herring. They are organized as cavalry, but have been trained to dismount on service. In peace they are armed with lance and sword, and in war they are asked to fight with rifle and bayonet. * * * The Russian cavalry west of Mukden never once took the offensive during the battle. Strapped up with rifle and bayonet, they are incapable of wielding the sword; their lances, except in the case of a small proportion of the Cossacks, have been left in Russia. * * * It is no wild statement to say that if Russian cavalry had been armed and trained in orthodox cavalry fashion, and handled in a manner consistent with cavalry tradition, Mukden would have proved a drawn battle."*

I believe that we have the best regular infantry in the world, and the National Guard will provide a large infantry reserve. It is absurd, therefore, with our comparatively small cavalry force, to attempt to make it equal in fire action to our infantry, if we are to sacrifice any of its mobility.

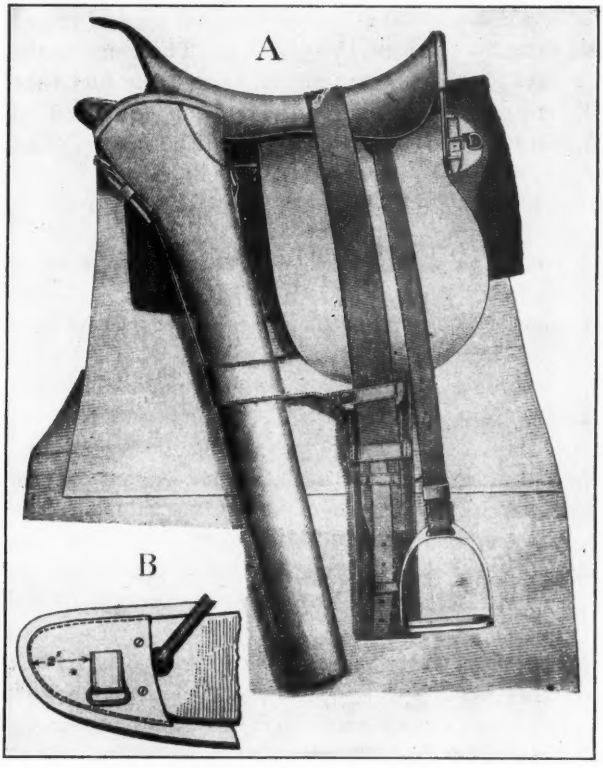
* * *

POSTSCRIPT.

Cavalry officers may be interested in learning that since the foregoing notes on "Cavalry Equipment" were written the British government has continued careful investigation of the question of the best method of carrying the rifle, and its deductions are of peculiar interest to us because the British cavalry, like ourselves, has just received a new short rifle. Final solution of the question does not appear to have been made, and furthermore, the type of saddle and bit is also receiving consideration by a special committee of British officers.

*See last issue of THE JOURNAL where the article upon the "Cavalry Lessons of the War," from the *London Times* is given in full.

The Patterson rifle carrier, which was supposed to have solved the question of rifle carrying mounted, has with other types been found somewhat unsatisfactory by the British War Office. The government has finally reverted to a form of bucket or scabbard, somewhat similar to that formerly in



THE BRITISH SCABBARD.

use, but longer and larger, to accommodate the new short rifle. It weighs two pounds eight ounces, and is made of stout bridle leather.

In Figure A, the front of the mouth of the bucket and the arm by which it is held in position, are stiffened by steel plates. It is suspended from steel saddle arches by passing

the bucket strap around the hind arch strut and then through the brass link on the side bar cap (see Fig. B). The arm is set on obliquely, placing the bucket after attachment in such a position that the butt of the rifle is in rear of the rider's elbow. The surcingle passes through the loop of the arm, as shown in the drawing.

The bucket may be attached to either side of the saddle, but as a rule it is worn on the off side. The complete equipment is said to be quite expensive, so that the fact that several British cavalry regiments have been equipped with it seems to indicate that no change will be made in the near future.

PROPOSED DRILL REGULATIONS FOR COLT'S AUTOMATIC MACHINE GUN, CAL. 30.

By Second Lieutenant GEORGE E. PRICE, Tenth Cavalry.

INTRODUCTION.

1. As discussed in the following pages the organization of the machine gun detachment, platoon and battery, refers to its use with cavalry only. The gun to be carried on pack mules.

2. The object of the drill is to train and prepare officers and men for war. All exercises must therefore be designed for war. The most important demands which war makes on the men are strictest discipline and order, paired with the utmost exertion of every power. To inculcate these qualities in such a manner as to make them, so to speak, a part of their very nature is one of the chief objects of all exercises. In war only the simple promises success; simple forms, then, must be learned and applied, and must be practiced with exactness, under full tension, and be completely mastered.

3. Machine gun batteries are to aid in obtaining the victory by means of their fire. They must, therefore, be able to shoot well, at the right time, from the right position, and at the right object. These requirements demand complete mastery of the mechanical construction of the weapon, high mobility on the part of the detachments, and tactical knowledge on the part of the officers. Commanding officers of posts and regiments should exercise supervision of the drill and instruction.

4. Continuous practice of one and the same exercise tires mind and body. Variation in the exercise is, therefore, necessary.

5. Alertness in grasping the advantages of the terrain, correct choice of position, correct estimation and measurement of distances, quick grasping of the object, are accomplishments which must be cultivated unceasingly; for without them the machine gun can be used with as little success as can other weapons without a thorough knowledge of tactical conditions.

6. The commands consist of preparatory commands and commands of execution. They are enunciated distinctly, but no louder than necessary. Commands given indifferently lead to laxity of execution; unnecessarily loud commands tend to make the men inattentive.

7. DEFINITIONS.

Section: One machine gun and three ammunition packs, manned, horsed and equipped.

Platoon: Not less than two nor more than three sections.

Battery: Not less than two nor more than three platoons.

Formation: The order in which the platoon or battery is formed. Formations are arranged so as to take up the least possible space, and to require the least ground practicable in passing from one to the other.

Order in Column: When the mules of each section are in column, the gun mule is in front.

Order in Line: When the sections are in line; each section in the order in column.

Order in Battery: When the pieces are placed on the tripod ready for firing.

INTERVALS.

8. Between sections in the order in line, fifteen yards. Between sections in the order in battery, fifteen yards.

DISTANCES.

9. Between sections in the order in column, four yards. Between mules of the same section in the order in column, four feet.

GENERAL REMARKS.

Composition of the Section.

10. A section should be detailed from each squadron as follows: One officer, chief of section; two noncommissioned officers, gunners; one noncommissioned officer, chief of ammunition mules; one noncommissioned officer, cannoneer; four privates, drivers; two privates, belt loaders; and two privates, horseholders.

The section, therefore, consists of one officer, four noncommissioned officers and eight privates.

When more than one squadron is stationed at a post the machine guns are organized into a platoon or battery, and an officer is detailed as instructor.

Only those officers and men who have taste and aptitude for such work should be selected for service with the machine gun, as it involves intelligent interest to insure the highest efficiency.

As soon as possible after the details have been made the men should be assigned to their duties. After being so assigned their duties should not be changed.

As this system of instruction presumes the use of the machine gun with cavalry only, the details will habitually report mounted.

DUTIES AT THE PICKET LINE, SADDLING, UNSADDLING, ETC.

To Put On the Pack Saddle.

11. The pack saddle with its accessories is placed near the picket line, resting on ends of pad. Blanket, folded in four even folds, rests on top of pack saddle.

In saddling, the two gunners saddle the gun mule; cannoneer and chief of ammunition mules saddle ammunition mule No. 1; the belt loaders saddle ammunition mule No. 2, and the two horseholders ammunition mule No. 3.

12. The corona, and then the blanket are carefully placed on the mule's back; care should be taken that the hair lies smoothly underneath, and that there are no wrinkles in the blanket or corona.

The men, working together as explained in Paragraph 11, lift the saddle and place it on the mule's back, a little in rear of the proper place; the crupper is placed under the dock, the saddle moved forward to position and the saddle cinch tightened.

The cargo cincha and lash ropes are placed over the saddle and secured. The driver then removes the blind and halter and puts on the bridle.

To Remove the Pack Saddle.

13. The driver removes the bridle, puts on the halter and secures the mule.

The men, working together as in saddling, loosen and fold over the top of the saddle, cargo cinchas, saddle cinchas and lash ropes. The saddle is slipped to the rear, crupper turned over the saddle, and saddle then removed and placed on the ground in rear of the picket line, blanket and corona on top.

Treatment of Mules.

14. The men are early impressed with the necessity of careful treatment of the mules. Rough treatment soon develops in mules habits which are most objectionable, and which greatly retard the proper service of the guns; while by quiet and careful handling they readily become accustomed to their duties, and perform them with little urging.

Mules move best with a loose rein. The drivers should keep abreast of the mules; should avoid threatening the mules or looking back at them. Mules are best halted by gentle pressure of the leading rein.

Packing.

15. The men, working together as explained in Paragraph 11, pack the saddles. The tripod is carried on the off and the gun on the near side of the gun mule. Four boxes of ammunition are also carried on the gun mule.

The attachments for carrying tripod, gun and ammunition boxes need no explanation.

When some of the ammunition boxes are empty care should be taken that the load is evenly distributed.

16. Before proceeding to further instruction, the men should be familiarized with the mechanical construction of the gun. A complete and thorough study of the description of the machine gun published by the Ordnance Department is recommended.

SCHOOL OF THE SECTION.

To Form and Section.

17. The details of each troop having reported at the place designated, they secure their horses to the picket line and are formed in single rank by the senior noncommissioned officer (noncommissioned officers on the right according to rank); he reports to the chief of section: "*Sir, the section is present,*" and takes his post on the right of the section.

18. The section having been reported, the chief of section commands: DRIVERS, FALL OUT.

At this command each driver takes a blind from the pack saddle and unties his mule and leads it to his pack saddle and faces to the front one yard in front of the saddle; he then blinds his mule, raising the mule's head to the height of the shoulder, and making him stand squarely on all four feet.

19. When the mules have all been led to their places and blinded, the chief of section commands: SADDLE.

At this command the men, working together as explained in Paragraph 11, saddle the mules. When all of the mules are saddled the chief of section directs that they be packed. The men, working together as explained in Paragraphs 11 and 15, pack the mules.

20. When the mules are all packed the chief of section commands: LEAD OUT.

The driver's horses are brought to them. The drivers then remove the blinds and place them over the left shoulder, remove the halter and put on the bridles. All the men then mount their horses and move out to the designated place and form in the order in column.

Posts.

21. Senior gunner to the right and abreast of the gun mule. Junior gunner to the left of and abreast of the driver of the gun mule. Cannoneer to the left of and abreast of the junior gunner. Horse holder No. 2 immediately in rear of the junior gunner and cannoneer. Horse holder No. 1 in rear of the senior gunner. Chief of ammunition mules to the right of and abreast of the first ammunition mules. Belt loaders to the right of and abreast of the second and third ammunition mules.

When it is necessary for the passing of obstacles, etc., for the men to take other positions, they may do so without command; the posts as given above must, however, be resumed as soon as the obstacle is passed.

The post of the chief of section is usually three yards to the right of and abreast of the gun mule. He may, however, go where he can best superintend his section.

22. In all movements the men on the right of the column and the drivers keep the mules up. The marching gait is a walk. The maneuver gaits are trot and gallop.

Marchings, Etc.

23. To move forward:

1. *Forward*, 2. MARCH.

The driver moves off steadily and promptly, starting the mule by the gentle pressure of the leading rein.

24. To halt:

HALT.

Drivers halt promptly; mules are halted by a firm gentle pressure of the leading rein.

25. To march by the flank:

1. *By the right* (or *left*) *flank*, 2. MARCH.

At the command *march* each driver marches by the flank, turning his horse over the arc of a circle, the mules and men on the marching flank taking up an increased gait.

26. To change direction:

1. *Column right* (or *left*), 2. MARCH.

At the command *march* the driver of the gun mule turns ninety degrees to the right or left on the arc of a circle; the mules and men on the marching flank take up the increased gait.

Each of the other drivers moves forward and turns on the same ground as the gun mule.

27. To march to the rear:

1. *To the rear*, 2. MARCH.

At the command *march* each driver turns to the left about and marches to the rear.

This movement will not be used except for short distances.

28. To march the section to the rear in the order of column:

1. *Column left about*, 2. MARCH.

At the command *march* the driver of the gun mule marches to the rear as explained in Paragraph 27.

The ammunition mules halt and execute *to the rear, march* in time to follow at their proper distance from the gun mule.

29. To oblique:

1. *Right* (or *left*) *oblique*, 2. MARCH.

Each driver obliques forty-five degrees to the right or left.

To resume the forward march, the command *forward, march* is given.

SCHOOL OF THE PLATOON.

30 The sections having been formed and mounted, as explained in Paragraph 20, each chief of section commands: REST. On the approach of the chief of platoon, each chief of section brings his section to attention, and beginning at the right each chief of section reports: *Sir, —— section is formed.*

The platoon or battery is habitually formed in the order in line.

31. To march in order of column to the right or left:

1. *Sections forward*, 2. *Column right* (or *left*), 3. MARCH.

At the second command the chief of the right or left section commands: *Forward, column right* (or *left*) and repeats

the command *march.* The other chiefs of sections command: 1. *Forward, column right* (or *left*), 2. MARCH, in time to follow the leading section at the proper distance.

32. Being in order of line, to march to the front in the order in column:

1. *Right* (or *left*) *by sections*, 2. MARCH.

The chief of the right or left section commands: 1. *Forward*, 2. MARCH. The other chiefs of sections command: 1. *Right* (or *left*) *oblique*, 2. MARCH, and follow the preceding section.

33. Being in the order in column to form order in line to the right or left:

1. *Sections column right* (or *left*), 2. MARCH.

Each section executes *column right* or *left* and marches in the new direction.

34. Being in the order in column to form order in line to the front:

1. *Right* (or *left*) *front into line*, 2. MARCH.

The leading section moves straight to the front. The chiefs of the other sections command, *right oblique*, *trot*, and repeat the command, *march.* When opposite their place in line they command, *forward*, *march*, and take the walk when they arrive abreast of the leading section.

If the platoon is marching at the gallop, the leading section takes the trot at the command *march.*

If marching at the trot, the chiefs of sections other than the leading one command, 1. *Right* (or *left*) *oblique*, *gallop*, 2. MARCH, and take the trot when they arrive abreast of the leading section.

SCHOOL OF THE BATTERY.

35. The movement as explained for the platoon are those used in the battery, the necessary substitution of commands being made.

Loading, Unloading, Aiming, and Pointing.

36. To load: Loading must be practiced often and in detail, so that every man is able to load correctly and with the utmost rapidity.

37. At the command *load*, a box of ammunition is placed in the slot on the gun, the top withdrawn, the brass tip of the feed belt pushed through the cartridge-shaped opening on the left of the gun and drawn out on the other side of the gun as far as it will go. This brings the first cartridge on top of the feed wheel. Let go of the belt and swing the gas lever downward and to the rear and until it strikes the bottom plate of the receiver. When released the force of the retracting spring will cause it to resume it normal position.

The gun is now loaded, and if the trigger be pulled the fired cartridge will be automatically ejected and the gun again loaded.

38. To unload: The belt may be removed by pushing forward the knurled head on the right side of the receiver near the left exit, and drawing the belt out to the left. After withdrawing the belt operate the lever once by hand to eject the loaded cartridge that remains in the chamber.

39. Position drills: Aside from loading the gun under diverse conditions, practice must be given in various ways of taking aim.

40. To aim: Particular value is to be attached to instruction in correct and quick aiming. The instructor must always satisfy himself as to the correctness of the execution.

The improvement of the eyesight and the training of the eye are the permanent objects of instruction, which are attained by means of targets placed at long ranges, as also by targets which appear and disappear suddenly.

41. To put the pieces into action:

HALT. ACTION FRONT.

At this command the chiefs of sections, gunners and cannoneers dismount as quickly as possible. The junior gunner and cannoneer hand their reins to horse holder No. 2.

The chief of section and senior gunner hand their reins to horse holder No. 1; the horse holders then join the ammunition mules.

The driver of the gun mule turns his mule to the left about and halts. The chief of the ammunition mules commands: 1. *Ammunition mules to the rear*, 2. *Gallop*, 3. MARCH, and moves about 200 yards to the rear, or when practicable, under cover.

The senior gunner loosens the cargo cincha, throws it forward on the mule's neck and takes off the tripod. He then removes the leather covering from the mount and drops it in rear of the mule.

The tripod is then set up facing the enemy or the target.

As soon as the cargo cincha is loosened the junior gunner takes off the gun, removes the case, drops it near the mount cover. He then places the gun on the mount and fastens it with the gun pin.

The cannoneer in the meantime has unfastened the cincha that holds the ammunition boxes and placed the ammunition on the ground. He then fastens up all straps, and the gun mule is led, at the gallop, back to the ammunition mules.

While the junior gunner is fastening the gun on the mount the senior gunner adjusts the saddle.

When the gun is fastened to the mount the junior gunner takes an ammunition box and places it in the slot on the side of the mount, opens the top and takes the brass tip of the feed belt and faces to the right. The gunner meanwhile has given a general direction to the gun.

After the cannoneer has fastened all straps he places the gun case and mount cover in the most convenient place.

The tripod legs are spread as far apart as is possible, in order that a small target may be presented to the enemy.

The chief of section then commands: LOAD. The junior

loads the piece as explained in Paragraph 37, and kneels or lies down where he can observe the effect of the fire.

The chief of platoon then designates the kind of fire, object and range, and commands: COMMENCE FIRING.

When the senior gunner has adjusted his sights, and carefully aimed the gun, he commences to fire.

The chief of section kneels on the right side of the gun and observes the effect of the fire.

The cannoneer, when not engaged in bringing up ammunition, lies down to the left of and in rear of the gun.

The two gunners and cannoneers should alternate in aiming and firing the gun, the chief of section designating the one to do the firing.

The three men serving the gun should be provided with asbestos covered gloves.

42. To dismount the gun and move to the front or rear:

LIMBER FRONT (or REAR).

At this command, or at a signal from the chief of section, the driver of the gun mule comes up at the gallop and halts about one yard in rear of the gun and faces to the rear.

If the command is *limber rear*, the ammunition mules are not brought up, but join the gun mule as it passes them.

If the command is *limber front*, the chief of ammunition mules commands: 1. *Forward*, 2. *Trot*, 3. MARCH.

43. The men should be exercised in putting the gun into action and dismounting it to move to the front or rear until it can be done with the utmost rapidity.

44. It will probably often happen in actual warfare that a section, or even a battery, will be so hard pressed that it will not have time to dismount and pack the gun.

In this case the gun should be disabled by taking out the handle. This is done in the following manner:

45. To take out the handle:

Operate the lever once by hand as in case of loading. Remove the handle lock by turning the lever backwards as far as possible and drawing the pin out to the right. The handle may then be drawn out to the rear. (If the sear and

trigger be released, the hammer will be forced out of the handle by the mainspring.)

46. If in danger of capture the gunner on the left of the gun should always remove the gun pin; this leaves the gun and tripod in shape to be picked up separately and carried away by the men on horseback.

47. As soon as the gunners and cannoneer and chief of section have mounted, they should charge, using their revolvers, and attempt to recover the gun.

TARGET PRACTICE, FIRING, DELIVERY OF THE COMMAND, ETC.

Firings.

48. The firings depend upon the objects of the engagement, the targets, and the available ammunition.

49. Aside from firing single shots there are two kinds of firings, intermittent and continuous.

Intermittent fire is a succession of about twenty five shots followed by a pause for the purpose of noticing the effect and correcting the sight and aim. It is employed to properly set the sights in exceptional cases, also when shooting at difficult targets, particularly in rolling territory and at great distances.

In all other cases continuous fire will be employed, which is only interrupted when circumstances demand it.

50. The fire of the machine gun is either directed at a certain point with a given elevation and a side direction, or it is strewn, *i. e.*, the object is fired at in its entire extension, or at only a part. This is termed fan fire.

If the fire is to be strewn the command must indicate it.

When fan fire is employed in a horizontal or oblique direction the clamp screws must be loosened.

When the fan fire is in a horizontal direction the gun is moved sideways, slowly and evenly, by the right shoulder.

When it is in a vertical direction, the left hand gives the elevation by means of the hand wheel.

If it is in a vertical and horizontal direction, a combination of the above is necessary.

When firing at objects that move rapidly or that are in a very uneven territory the gun may be loosened entirely.

The rapidity of the fan fire depends on the distance and kind of targets.

Generally the gun is moved slowly and evenly.

A too rapid moving of the gun is detrimental to the effect of the fire.

51. In exceptional cases, when the observation is very good, it may be of advantage, in firing at fixed as well as at moving targets, to point the gun with the head raised and without aiming, by changing the elevation and side direction. This, however, is the exception.

Delivery of the Command.

52. The command must be as short as possible, and must designate, first the direction, then the object, then the elevation and the kind of fire.

The designation must exclude every misunderstanding.

The detachments of the enemy must be designated as soon as they are plainly seen; (*e. g., the guns toward the right* and not *left flank battery*).

When shooting at a difficult target it may be advisable to let the gunner use the field glass in order that he may be the better able to apprehend the target.

The commands of the chief of platoon should always be repeated by the chiefs of sections.

53. Examples:

At cavalry, left oblique, 700 yards, continuous fan fire.

To the front at the green hillock, to the left of the single tree, artillery, continuous fan fire, or *intermittent fire.*

The gun farthest toward the left, 1,200 yards, intermittent fire.

At skirmishers coming out of woods, to the right oblique, 1,000 yards, continuous fan fire.

54. The firing ceases at the command *cease firing.*

The men serving the gun keep the positions which they have at the time.

55. Sights are changed. when the command indicates a new target.

When the guns fire at different ranges the command is, *e. g., change from 800 to 1,000,* or *all sights 900.*

To Fire.

56. The gun must be firmly supported at all times; the pressure on the trigger must be unintermittent, and the aim must be true.

FIRE CONTROL, FIRE DISCIPLINE, OBSERVATION OF THE EFFECT OF FIRE.

Fire Control.

57. The fire must be controlled as long as possible by the officer in command.

When this is no longer possible the fire should be controlled by the chiefs of sections.

58. It may be advisable under favorable circumstances, to distribute the fire upon the entire object. The range must first be found by intermittent fire.

59. As a general principle every gun fires at that part of the object which is directly in its front, or which corresponds to its own place in the formation, so that every part of the entire object is fired at.

If a cases arises in which this method is not applicable, the guns fire crosswise. This may be done without command from the officer in command.

60. When the object moves sidewise, proper account of the distance and rapidity of the movement is taken, and a target is commanded or selected, as the case may be, in such a manner that the object will move into the line of fire.

61. In general, the sights of all guns are adjusted uniformly. When the depths of the object justifies it, or if observation is impossible, two, or even three different sights may be used, ranging from 50 to 100 yards.

When firing with two sights the guns to the right use the finer sight. When three different sights are used the guns

to the right use the fine, those to the left the full, those in the center the half sight.

62. It may be of advantage under certain circumstances, particularly when the object is of great depth or width, and proper observation is impossible, to extend the territory taken under fire by strewing the fire slightly in a vertical direction.

Fire Discipline.

63. Fire discipline embraces the conscientious execution of the commands given in the engagement.

It demands, furthermore, care in firing and in using the advantages of the territory to increase the effectiveness of the fire, constant attention to the officer in command and to the enemy, immediate cessation of the fire as soon as the target disappears or the command to cease firing is given.

If control of the fire ceases the men must act independently.

To this end they must be properly instructed and trained in time of peace.

Observing the Effect of the Fire.

64. A constant observation of the fire effect by means of field glasses is necessary in order to ascertain from the hits and the behavior of the enemy whether the sight and the target aimed at are correct, and what corrections are needed to promote the effect of the fire. The observation devolves principally on the chiefs of platoons and sections.

In case immediate observation from the firing line is impossible, it is advisable, if possible, to post pickets to the right or left and under cover, to observe the effect of the fire and to communicate the results of their observations by signals, calls, or intermediate pickets, to the firing line.

Pauses in the Fire.

65. Intermissions in the fire are employed with due consideration of the engagement to put the gun in proper condition by oiling, etc.

COURSE OF INSTRUCTION WITH BALL CARTRIDGES.

66. Before proceeding to the following, instruction exercises should be had by firing single shots at rectangular targets in order that the men may be instructed in the positions, aiming and firing.

67. The instruction with ball cartridges is divided into instruction and record practice.

A detailed report should be made of the record practice.

68. The targets used are those described in the Small Arms Firing Regulations.

69. In all this work the guns are brought to the range packed, and are unpacked and moved from one range to the other by the commands as explained in Paragraphs 41 and 42.

In the practice by sections, the chiefs of sections direct the firing under the supervision of the chief of platoon.

Instruction Practice.

70. (*a*) Intermittent fire by section; target "G;" ranges 300, 600, 800 and 1,000 yards.

Twenty targets to be placed in line with one yard interval between groups. At least 240 shots to be fired at each range.

(*b*) Intermittent fan fire by section; target "G;" ranges 600, 800 and 1,000 yards.

Targets are placed same as in (*a*). At least 240 shots to be fired at each range.

The gun is placed where it can best command the line of targets, and the line is swept from left to right and back again.

(*c*) Continuous fan fire by section; target "G;" ranges 600, 800 and 1,000 yards.

Same as (*b*), except that the fire is continuous.

(*d*) Continuous fan fire by platoon or battery; target "G;" ranges 600, 800 and 1,000 yards.

Same as (*c*), twenty targets being added for each section.

Platoon or battery takes position where it can best command the line of targets in the order in battery.

(*e*) Continuous fan fire by section combined with maneuvering; targets "G;" ranges 600, 800 and 1,000 yards.

The section approaches the line of targets in the order in column, and when about 1,200 yards from the line of targets it advances rapidly to the 1,000 yard firing point, where the gun is put into action as explained in Paragraph 41.

When 240 shots have been fired the gun is dismounted as explained in Paragraph 42, and the section is moved rapidly to 800 yards, where the gun is again put into action and 240 shots fired. The detachment then moves rapidly to 600 yards where 240 shots are fired.

In this practice everything should be done as rapidly as possible.

(*f*) Continuous fan fire by platoon or battery combined with maneuvering; ranges 600, 800 and 1,000 yards; target "G."

Same as (*e*), twenty targets being added for each section.

The platoon or battery approaches the line of targets in the order in column, and when at a distance of 1,200 yards from the target, the order in line is formed to the front.

The guns are put into action dismounted and moved to the front by means of the commands prescribed in Paragraphs 41 and 42.

Record Practice.

71. (*a*) Intermittent fan fire by section; target "G;" ranges 300, 600, 800 and 1,000 yards.

Same as (*b*) in instruction practice; 240 shots are fired at each range. A record is kept of the number of hits in kneeling and lying figure at each range.

(*b*) Continuous fan fire by section combined with maneuvering; target "G;" ranges 600, 800 and 1,000 yards.

Same as (*e*) in instruction practice, except that 480 shots are fired at 600 yards, and the section retires, first to 800 and then to 1,000 yards. In the advance 240 shots are fired at 800 and 1,000, and 480 at 600 yards, and in the retreat 240 shots are fired at 800 and 1,000 yards. A record should be kept of the time required to make the advance and retreat at each range and the total number of hits made.

(*c*) Continuous fan fire by platoon or battery combined with maneuvering; target "G;" ranges 600, 800 and 1,000 yards.

Same as (*f*) in instruction practice, except that after firing 480 shots at 600 yards the platoon or battery retreats and fires at 800 and 1,000 yards, as in the preceding paragraph.

Record is kept of the time and number of hits, as in (*b*).

72. In computing the percentage, a hit in each figure will count one.

73. After the foregoing course is completed if sufficient ammunition is left, practice should be had at extreme ranges at lines of figure targets representing troops in close order in line and in line of columns, and at silhouettes of mounted men.

74. If the supply of ammunition will allow it practice should also be had at unknown ranges.

Figure targets representing different divisions of the outposts or detachments of troops should be placed along certain roads, ravines, etc., and the section or platoon required to locate them, put the pieces into action, obtain the range, and fire as many shots as would probably be possible in actual warfare, and then advance or retire as the conditions might warrant.

In this practice some officers, other than those on duty with the machine guns, should accompany the section or platoon as umpires, and decide whether the machine gun should advance or retire.

If the conditions warrant, the umpire should occasionally rule out a few men, and the section or platoon be required to work short handed. Occasionally an entire section should be ruled out of action.

The umpire should also rule, if the conditions warrant, that the machine gun is in immediate danger of being captured. This would give the men and officers, under conditions approaching as nearly as possible actual warfare, exercise in disabling the gun to prevent its use by the enemy, and in attempting to recapture the gun.

THE USE OF THE MACHINE GUN WITH ADVANCE AND REAR GUARD.

75. In the case of the squadron acting alone the machine gun section should be with the support and under the orders of the commander of the advance guard, unless that officer is junior to the chief of section. In that case the chief of section will exercise general supervision over the advance guard, but should retain immediate command of his gun.

76. In the case of the regiment acting alone, one section should be with the support and the other two sections with the reserve.

The chief of platoon will habitually be with the two sections with the reserve. He may, however, go where his presence is required.

77. In larger bodies all the machine guns should be united and placed under the command of one officer, and subject to the orders of the commanding general only. They will be assigned to different divisions of advance guards, as will be best suited to their use and to the plans of the commanding general.

Encountering the Enemy.

78. As soon as the enemy is seen the machine guns that are with the support should take their place on the firing line where their fire can best compel the enemy to delay his advance.

79. As the battle develops, their tactical place will depend upon the plans of the commanding general.

The machine guns will probably be of the greatest use in preparing for a charge or in repelling a charge, therefore their place will be where the heaviest fire is to be concentrated.

80. In the retreat, on account of their mobility, the machine guns will be very useful in delaying the pursuit and in protecting bridges or passes.

81. When a squadron or more forms the advance or rear guard, at least one machine gun should be with the support. In larger bodies this should be increased proportionately.

The Engagement.

82. The utility of the machine gun in the engagement depends upon the perfect mastery of the mechanical construction of the weapon, a careful training in target practice, its mobility and the careful training of both men and animals.

General Principles.

83. Machine guns enable the general to bring into action at certain points all the effectiveness of infantry fire on the smallest space.

The guns can be employed in all territory suitable to infantry or cavalry. In battle the object which they offer to the enemy is no larger than that offered by infantry under similar conditions; and with reference to their fighting ability they are much less liable to losses than infantry.

84. Cover that is scarcely large enough for a platoon of cavalry will protect an entire machine gun battery.

85. The carrying power and effect of the machine gun is that of the infantry rifle. The rapid succession of shots and the bunched hits, the small angle of cross fire, the possibility of assembling a number of guns in a limited space enable the machine gun battery to obtain a complete success and to deliver a disastrous fire even at long ranges at large and crowded objects.

86. Machine guns generally avoid a conflict with an enemy whose firing line is protected by good cover. Such a conflict requires an expenditure of ammunition out of all proportion to the number of hits made. In such cases the guns may be withdrawn temporarily and reserved for the decisive moments.

87. The machine gun battery can at all times meet a cavalry attack with repose. Any formation will be found serviceable to repulse it provided it enables the battery to direct a steady fan fire into the cavalry. Particular attention must be given to the enemy's following lines, their own flanks and the protection of the horses and mules.

In open territory machine gun batteries can safely advance without regard to hostile cavalry so long as the latter is not

present in such a superior number that it can attack simultaneously from different sides.

88. As to a fight with artillery, it is to be noted that the fire superiority is with that weapon at a long range. If the machine guns are used to fight artillery they must be brought as near the artillery as possible. A fan fire distributed over the entire firing line of a battery is not practicable.

89. Machine guns can never take the place of artillery. They will be employed mainly on occasions where the rapidity of their fire, their mobility and their ability to disappear quickly can be fully utilized.

90. A careful knowledge of the conditions in general, of the intentions of the general, and of the status of the engagement, are necessary requirements for a correct employment of the machine guns.

The disposition of the machine guns, therefore, rests immediately with the highest officer in command.

Reconnoissance and Choice of Position.

91. The attainment of the greatest fire effect governs the choice of position for the gun; considerations as to cover are of secondary importance.

92. Every position must be reconnoitered previous to its selection. A timely and well directed reconnoissance is a condition of success. It embraces ascertainments of targets, knowledge of the territory which is to be occupied by the troops, knowledge of the roads of approach and their conditions, also the means of securing troops against surprise.

93. When marching forward or in a defensive position the battery commander himself reconnoiters. When moving to the rear the battery commander remains with his battery as long as it is in the zone of fire, but directs another officer to reconnoiter. Before taking up the position, the battery commander if possible must have examined it.

94. The enemy's attention must not be drawn to the chosen position.

95. The following qualifications are desirable in a good position: An extended clear field of fire, on which a good

fire effect is possible up to within the shortest range; a firing line at right angles with the line of fire; sufficient space; cover obstructing the enemy's view; fair conditions of the ground at and to the rear of the firing line.

96. Positions close to or in the same height of objects, the range of which is known to the enemy, are to be avoided; nor is it advisable to choose a position in front of them, because they aid the enemy in finding the range; but a position in front of a dark background or on territory covered with suitable growth, will make it difficult for the enemy to find the range.

Every kind of mask, even that of artificial construction, hinders the enemy's observation.

Taking Position for Firing.

97. When moving forward and when taking position the security of the battery must never be lost sight of. If the flanks are threatened, particularly in difficult territory, the officer commanding the rear troops sends out scouts. The scouts are not to advance as far as possible, but must keep in touch with their troops.

98. Directions concerning the taking of the position must be given in time to avoid delay in opening fire. Particular effort must be made to take position under cover and to surprise the enemy by sudden opening of fire. This, however, is possible only if particular attention is given to cover while marching to the position, and the enemy is in doubt as to the contemplated position. If cover is wanting, or if the battery is to go into action without delay, the commander must endeavor to surprise the enemy by the rapidity with which he takes the position and opens fire.

99. The position of each gun is chosen with respect to its fire effect and cover. The interval between separate machine guns, is, as a rule, fifteen yards, but it is not necessary to maintain alignment and intervals. It must be borne in mind, however, that the losses caused by the enemy's fire will be greater if the guns are placed in close proximity. The guns must not hide one another in firing. It may be of

advantage if the flanks are threatened, to form the guns in echelon.

Opening and Conducting the Fire.

100. The resolve to open fire must not be made hastily. It must be remembered that the fire of machine guns is of decisive effect only if poured on an enemy who is clearly within the zone of fire.

It is immaterial what kind of weapons the enemy employs.

The choice of the target is dependent on its tactical importance at the time. The fire will next be directed against objects, which because of their height, depth, breadth and density promise a high percentage of hits.

101. Machine guns should not be permitted to fire over the heads of friendly troops unless the nature of the territory permits the formation of several firing lines, one above the other.

102. Firing at night will be successful only if the guns have been pointed during day time at places where the enemy is expected, or if the objects fired at are illuminated, as for instance, bivouac with fires, etc.

103. It must be remembered also that the ammunition supply is limited and that the expenditure of a certain amount of ammunition represents an expenditure of power, which must be made only when justifiable.

If, however, it has once been resolved to take a certain object under fire, then the ammunition necessary for the attainment of the object of the engagement must be expended without stint.

Fire of insufficient effect weakens the moral element of one's own troops while strengthening that of the enemy.

104. The enemy will feel his losses all the more if they are sustained in a brief period. In most cases it will, therefore, be advisable, even if engaged with a weak enemy, to open fire, not from one to two sections, but from the entire battery.

In both cases the expenditure of ammunition would probably be equal, but the losses of the battery will be less heavy in the latter case.

105. A change of targets is made when the guns have been completely successful in their firing at the former object. Frequent changes of target weakens the fire effect and are therefore to be avoided.

106. It will not always be possible to avoid a distribution of the fire over several objects; but the distribution of the fire must not degenerate into a useless, ineffective division of the fire.

107. Presence of mind, readiness for action, perfect fire discipline, are required to assure the attainment of a complete fire effect. The fire discipline must be maintained even though many officers and men are disabled in the course of the fight. If the men are well instructed the presence of mind of the individual and the example of the particularly cautious and courageous men guarantee a successful continuation of the fight against an enemy whose situation is equally difficult.

The Defense.

108. When employing machine guns for purpose of defense, it must be borne in mind that the guns are not suited for long drawn out engagements, and that in such engagements their great mobility cannot be utilized if they are directed to defend only a certain portion of territory.

It will, as a rule, be advisable also in defense to keep the machine guns with the reserve from the first, and to use them as necessity demands, for strengthening the line of defense at threatened points, preventing flank movements, resisting the charge, or executing offensive movements.

This does not preclude their employment at the beginning of the battle, for instance, in obtaining and keeping control of roads of approach .

It is also possible in case a withdrawal of the guns under cover is assured, to place the machine gun batteries in front of or on the flank of the main line of defense in such a man-

ner that they can take that part of the territory in which the enemy will probably place his artillery, in a surprising manner under fire.

Sometimes machine guns can be employed from the flank to take dead angles under fire.

109. Cover should be provided for all positions which have been previously assigned to machine guns. If time is lacking, efforts must at least be made to construct masks, to improve the field of fire, and to obtain the distances.

The Pursuit.

110. After successful combat the machine gun batteries must be used (in the freest manner) for following up the victory. For this employment they are eminently qualified, combining as they do firing ability with high mobility. The enemy must be pursued until the pursuers are completely exhausted. The machine guns advance to within the most effective firing distance and break down all attempts of the enemy at rallying or entrenching.

A fire delivered from the flank is particularly effective. A plentiful supply of ammunition is necessary for an energetic pursuit.

The Retreat.

111. In case an engagement is broken off, or when it has been unsuccessful, the machine guns can be of great service by confronting the enemy without regard to the probable loss of the guns, and pouring a deadly fire into his ranks.

Great attention must be given to the flank, for flank attacks are disastrous to the retreating army.

Suitable flank positions, if they are possible, will greatly relieve the retreat.

Problems.

112. During the forty days' field exercises the machine guns should frequently be assigned to squadrons and exercised in advance and rear guard work, attack and defense and with raiding parties.

It will probably not be advisable to use the machine guns with smaller bodies than a squadron of four troops.

Report.

113. An intelligent and detailed report of the work with the machine guns will be made as soon as possible at the end of the instruction period.

ARMY COÖPERATIVE FIRE ASSOCIATION.

By Captain M. F. DAVIS, Tenth Cavalry.

THE sum of $43,682.00 represents the amount paid to officers of the army by the Army Coöperative Fire Association on account of losses sustained by fire from date of its organization in 1887. This sum has cost its members $1.86 on every one thousand dollars of insurance for each of the years covered by the Association's existence.

To the uninformed this statement must lead to the question: "What sort of an organization is the Army Co-operative Fire Association?"

Prior to its existence our officers were frequently subject to total losses from fire. Buildings of a temporary character occupied as quarters, usually constructed of inflammable material, and lack of ample fire protection at frontier stations, made it difficult to secure insurance from old line companies at other than very high rates, usually prohibitive to a majority of army men.

To meet this peculiar and most unfortunate situation a coöperative plan of insurance was proposed and first discussed at Fort Leavenworth, Kansas, in 1886. The argument was advanced that if life insurance could be conducted along lines of coöperation, there was no good reason why the same principle could not be applied to fire insurance. This view proved to be the inspiration for a movement leading to the birth of the Association in 1887, whose plan of protection it is proposed to describe in this paper.

In framing a constitution the following ideas were constantly kept to the front: less difficulty for army officers to protect themselves against loss by fire; giving this protection at actual cost to the members; and avoiding the many re-

strictions contained in policies of old line companies. Mutuality was the watchword, and along these lines the framers of the constitution directed their work in drafting and adopting the constitution. It has undergone but few changes during the period of its nineteen years of existence, and these changes have been in the direction of improvements which experience taught.

With a view to providing a reserve fund to enable the Association to promptly meet all approved claims, benefit certificates, divided into five classes, are issued. These range from $400.00 to $2,000.00. A member of any one of these classes must, after being a member three years, have at all times to his credit an amount equal to four assessments of such class. For example: One assessment in the $400.00 class is $1.50; in the $800.00 class it is $3.00; in the $1,200.00 class, $4 50; in the $1,600.00 class $6.00; and in the maximum or $2,000.00 class, it is five times that of the lowest class, or $7.50. Multiplying the assessment of any one of these classes by four, the required credit of that class is obtained. In order that no hardship may work upon those who join, one assessment only is required upon submitting application, three years from date of joining being allowed in which to reach the full credit. One assessment must be paid each year on the anniversary of joining. When the required credit is reached by the member he makes annual payment of actual annual fire loss in January of each year thereafter.

Losses are charged against the credit of each member. To illustrate: During 1905 the fire losses reached $1,658.00. Members were assessed as follows: In the $400 class, 35 cents; in the $800 class 70 cents; in the $1,200 class, $1.05; in the $1,600 class, $1.40 cents; in the $2,000 class, $1.75. Taking the amount assessed against a member of each class and multiplying same by the number in the respective classes, the total sum to meet losses will be obtained.

On December 31st of each year the member's credit is balanced and the amount lacking to meet the required credit represents the cost of protection for the year. If a member in the maximum or $2,000 class is charged with $1.75, as was the case last year, he is called on to make a remittance of

that amount (plus 60 cents for annual expenses) and when received his credit is again $30.00, or four full assessments of the class. The cost of this protection varies, of course. It may be higher or lower, as the years go on, but its members have the satisfaction of knowing that brother officers have been aided.

A member wishing to withdraw from the Association has returned to him the entire balance to his credit. This makes it plain that the reserve fund constitutes merely a loan (without interest) to the Association, with the privilege of charging against it all losses as they occur, in order that prompt payment may follow adjusted losses. Since the organization of the Association it has returned to withdrawing members $15,000. Upon the death of a member the balance due him is remitted to his widow or other heirs.

The adjustments of claims for fire losses is conducted in a simple method. In case of loss, the member concerned notifies the secretary. The executive committee selects an officer to represent the Association, and the member sustaining the loss selects two others, all members if practicable, and these three form the board of adjustment. When the board has finished its labors, their report is forwarded to the secretary for approval by the executive committee. This committee goes over every item, and if approved an order issues for the payment of the claim. Where it happens that the claim submitted is considered as excessive the report is returned to the board for further information. The attitude of the executive committee in its examination of claims for fire losses is best illustrated by a decision recently handed down on the subject. In this the committee says:

MARKET VALUE MUST GOVERN.

"Claims are adjusted on basis of actual market value of property at the time of loss. Original purchase cost should be taken simply as evidence of value at a certain time, and if appreciation since purchase is claimed, amount thereof shall be added to the original cost; but beneficiary must show by satisfactory evidence that market value of property has increased and how much."—*Decision June 25, 1889.*

"The executive committee desires in all cases to approve

the action of the adjusting board, but in justice to the Association it feels in duty bound to scrutinize and consider each claim carefully, and it cannot approve claims or allowances which, on the face, appear too high. Where articles are shown as having been in use from two to five years, and the estimated loss is placed at the original cost, and where the adjusting board allows the full amount of estimated loss, the executive committee cannot do otherwise than return the proceedings for re-consideration or further explanation.

"The executive committee endeavors to be somewhat more liberal than regular adjusters of civilian companies, and desires to return a fair allowance for actual losses sustained, but where bed linen, civilian clothing, uniforms, etc., have been in use several years, and claim for original cost is made and allowed by the board, (or where only slight reduction from original cost is made) the executive committee will have to disapprove the allowance. Losses must be itemized; such items as '48 professional books, $48.00,' or 'stockings, $7.00,' or 'laundry, unopened, $20.00,' will be returned for specific information."

The following extract from the constitution shows what and where property is protected:

"ART. IV, SEC. 1. *Protection of Property.*—Effects and personal property of every kind whatsoever belonging to members or their families shall be protected by the Association, and benefits paid thereon for damage or loss by fire sustained while the property is on a military reservation, is within fire limits of a city or town which has a paid fire department, is presumably under the protection of United States troops, or is in transit between protected stations; *Provided*, That the executive committee may, upon the recommendation of a board of three or more members, declare any building, whether on a military reservation or not, as unsafe and outside of the fire limits and property stored therein non-protected; *Provided further*, That the Association shall never pay on damages or losses due to any one fire a sum aggregating more than ten thousand dollars ($10,000), and it is hereby understood and declared that every policy now in force or hereafter issued shall be subject to the condition that when losses sustained in any one fire exceed ten thousand dollars, this sum only shall be distributed pro rata on the said losses.

"SEC. 2. Storage shall be considered equivalent to residence, and property left on a military reservation or with a

command of troops elsewhere, shall be protected as though the beneficiary himself were present."

The finances of the Association are divided into two funds—"The Fire Indemnity Fund" and "The Expense Fund." The indemnity or reserve fund is created, as already shown, from the payment of assessments, and cannot be used for purposes other than for which created, viz: the payment of fire losses. It is a sacred fund to that extent. At this writing the reserve fund enjoys the comfortable figures of $20,000. Under the provisions of the by-laws this fund, with the exception of a sufficient sum to meet promptly the claims presented, must be invested in government securities. The Association at present writing has $17,500 in U. S. registered two per cent. bonds of 1930. The interest accruing from these securities and from deposits held in banks is placed in the general expense fund, used for office management. This fund is further stimulated from annual dues of members amounting to sixty cents each. This is paid at the time assessments are remitted. The total income of this fund last year reached $1,245.40. This includes the accrued interests on securities and deposits. Since 1887 the total received for the expense fund amounts to $16,588.30.

The officers of the Association consist of a president, vice-president, secretary and treasurer. The two last named offices are combined in one individual. The executive committee is composed of the officers named and two additional members selected by the Association at each biennial meeting. The secretary-treasurer is appointed by the committee. To these officers is intrusted the entire management of the business of the Association, and how well these duties have been discharged during the years of its life is attested by its success. The headquarters of the Association is at Fort Leavenworth, where the constitution says it shall be established. The officers must submit each year an accounting of their stewardship.

In setting forth the objects of the Army Coöperative Fire Association, only the main features of its plan of operations have been given. An examination of the records shows

that the business of the Association has been conducted with but a single aim — to furnish sure and safe protection to officers of the army, including a very low cost for same.

In conclusion, it is only proper to make here of record the fact that the Army Coöperative Fire Association owes its existence to Captain, now Major General, Arthur MacArthur. It was he who first suggested such an organization, and in this he was strongly supported by the late Colonel A. K. Arnold, First Cavalry. The late Lieutenant Rowland G. Hill, Twentieth Infantry, the Association's first secretary, did much in placing it on a sound business basis. He was the author of a number of the important provisions which govern it.

INDIRECT FIRE.

By Captain JOHN E. McMAHON, Artillery Corps.

THE history of the introduction and use of indirect fire for field artillery forms an interesting chapter in the story of the progress made in the great game of war during the past ten years. As early as 1893 the French began the construction of a new rapid fire field gun, which was destined to bring about great changes in the tactical handling of field artillery. The publication of their provisional drill regulations in 1897 first revealed to the military world that a revolution had been effected in field artillery by the successful building of the new gun and the development of the methods of fire adapted to its use. For the Germans it was a clap out of a clear sky. The year previous they had completely re-equipped their field artillery with what is known as an accelerated fire gun, in which the recoil is partially checked by means of a rope-brake, but which requires to be relaid after each discharge. There was no money available for the construction of a new system, and to ask for it was to confess to the country that they had been caught napping by the French. To save their face there was but one thing to do, and so the edict went forth from the inner circles of the military hierarchy to begin a campaign of depreciation of the French system. From Von Röhne and Von Alten down, the German military writers united to declare that a rapid-fire field gun was an impracticable weapon, and that the methods of indirect fire, while they might do for coast artillery, had no place in the tactics of field artillery.

Matters were at this stage when the successful completion of a rapid fire field gun by the Ordnance Department of our army called for the adoption of drill regulations suited

to the new materiel. The board of field artillery officers, convened for this purpose, found themselves called upon to decide at once the important question whether indirect fire was suitable for field artillery and, if so, to what extent should it be used. On the one hand the French held that it was always to be used when the tactical situation or the configuration of the ground offered no objection thereto; and while it was found impossible to discover whether all they claimed for the new system was true, so carefully had they guarded the experimental firings from curious eyes, still it might safely be taken for granted that they had not staked their security as a nation on a revolutionary change in their field artillery materiel and tactics without first having most rigidly tested the system from every conceivable point of view. Arrayed against the French methods, on the other hand, was all the force of German expert opinion, expressed in no doubtful terms, yet the sincerity of which was open to the suspicion that, if the $13,000,000 spent on the equipment of their field artillery with the model 1896 gun was safely back in the treasury, the Kaiser's army would soon be furnished with a modern rapid-fire gun.

The question at issue, however, was speedily settled by the experiences of actual war. The Japanese, although equipped with a field piece of low ballistic power modeled after the German accelerated fire gun, and with a system of field artillery tactics based upon German methods and ideas, had been quick to realize the advantages of the French system, and, as the result soon proved, had learned their lesson well. The Russians, on the other hand, although possessing a powerful modern quick-firing gun, began the war in seemingly total ignorance of the new methods of fire; but they had not long to wait for their first lesson. At the battle of the Yalu their artillery was overwhelmed by the fire of the Japanese guns hidden behind a covering crest. A loss of fifteen field guns and eight maxims in the first fight revealed to the Russian artillery officer the urgent necessity of learning and putting into practice the methods of indirect fire; but it took time and further severe losses to impress on the officers of the other branches of the service the true value of

methods which to them seemed timid, not to say cowardly. According to Lieutenant Colonel Patchenko, of the Russian artillery, division commanders were prone to insist that the artillery should go into position in the open and directly behind the infantry. A battery commander was openly called a coward because he represented to the commanding general that the artillery position chosen for him was impossible. With the battle of Tashihkiao, July 26, 1904, in which five Russian batteries, by the skillful use of indirect fire, more than held their own against thirteen Japanese batteries, the Russian artillery began to make it clear that they had really learned the game. From that time on the struggle between the artillery of the contending armies became much more equal.

From this it must be plain to everyone that, if we wish to be successful in our next war, it is necessary not only that our artillery should be so organized and trained as to develop to the highest point the advantages of the new gun, but also that officers of the other arms should have a general knowledge of the principles governing the tactical use of artillery on the battlefield. They should know just what help to expect from their own artillery, as well as what dispositions to make and what precautions to observe when directing the attack under the fire of the enemy's guns. It is with the sole object of helping in a small way to bring about this much desired "comradeship of battle," that this article has been written.

While it is neither necessary nor desirable to give here the details of our system of indirect fire, any explanation of the general principles governing its employment requires a brief description of the methods of indirect laying now generally used. The guns are placed in position behind a crest, which prevents their being seen by the enemy, and at the same time conceals the target from the view of the gunners. The battery commander, from a position on the flank or in rear of his guns, selects some prominent object as an auxiliary aiming point, which object must be visible from the position of the battery. With the battery telescope provided for the purpose, he measures the angle between the aiming point

and target, and after correcting this angle for the distance between his observing station and the flank gun, he transmits this corrected angle, together with the other firing data, to the gunner of the indicated flank piece. This gunner sets his panoramic sight at the indicated reading and lays it on the aiming point, which causes the gun to be pointed at the target. Having laid the flank gun on the target, the battery commander can concentrate the fire of all four guns on it, can deliver parallel fire, or can close or open the sheaf at will, by making the proper changes in the data, which he obtains by a rapid and extremely simple mathematical calculation. He is also able to swing the fire of his guns from one target to another by measuring the angular distance between them, and sending the new reading to the gunners. The same principles apply in the conduct of the fire of a battalion of three batteries by its battalion commander, or that of a six-battery regiment by its regimental commander.

It now remains to describe briefly just what an infantry or cavalry commander has to expect from the enemy's artillery using indirect fire, and this, it seems to me, can best be learned by following the procedure of the captain of a hostile battery, who is getting ready to use his guns in this method of fire.

The position selected will preferably be at the base of a long and gentle slope, so that the guns will be far enough away from the covering crest to give immunity from the enemy's shrapnel, when he begins to search the reverse slope, as he surely will. A suitable aiming point having been selected, the battery commander will then proceed to "register" the field, that is, he will measure the angular distance from the aiming point to all prominent objects in the front assigned to him and calculate all the elements of fire for these points. He will especially look out for all buildings capable of being fortified, all debouches from the enemy's rear, all roads and villages visible and in range from his position, and more particularly any natural features that would go to make up a key-point. If a stationary or slowly-moving target presents itself in the vicinity of any of these points, he verifies the firing data already obtained in advance by a

deliberate ranging fire, to be followed by fire for effect, when this verification is complete. If troops in mass or artillery limbered up appear, he will endeavor to crush them by a rapid and overwhelming fire covering the zone in which they are moving—the French "rafale"—without waiting to verify accurately the elements of fire.

Inasmuch as the modern rapid-fire field gun has a motion in azimuth on its carriage, such that a front of 430 yards can be covered at a range of 3,000 yards without changing the position of the trail, and also that the fire can be directed from one target to another by merely making the necessary change in the reading of the panoramic sight, it will not take long for artillery to pick up troops exposing themselves in close formation at ranges up to 4,000 yards. It should be remembered, also, that once the target is found, fire from guns capable of discharging fifteen projectiles a minute is bound to cause destructive losses in a very short space of time; and while the changes in the tactical handling of infantry and cavalry on the field of battle, brought about by the improvements in modern artillery, do not come under the range of this article, it is only proper to call attention to the significant fact that, coincident with the introduction of new field artillery materiel and methods of fire, we note the reappearance of the night attack, which, up to the beginning of the Russo-Japanese War, was generally regarded as a risky and rarely successful tactical operation.

It must not be concluded from what proceeds that indirect fire will be the only method employed by the artillery in action. In purely cavalry engagements it will have no place at all, for its slow methods of preparation render it unfit for the rapid action of cavalry against cavalry, and it is comparatively useless against rapidly moving targets. Its rôle is confined to occasions on which there is ample time for the careful selection and reconnoissance of the artillery positions and the deliberate preparation of the firing data. Such occasions will arise in the preparatory combat by which all great battles will be opened and in the artillery preparation for the main infantry attack. In cases like this it would be criminally foolish to sacrifice the enormous advantages of

concealment and protection which go with this method of fire, in order to display a silly bravado in exposing the guns in position for direct fire in the open, or to offset hostile criticism as to timid conduct on the part of artillery; but once the infantry begins to advance, a certain proportion of the batteries will be detailed to go forward with the attack and take their share in the butcher's bill, without the payment of which no great battle will ever be won. In their forward movement the artillery is bound to suffer severely in both men and horses; but once in position, there should be no great difficulty in holding it under artillery and infantry fire, with the cannoneers sheltered as they are behind shields which stop a bullet fired from the new Springfield rifle at 100 yards.

It is a matter for congratulation to the army at large that the Ordnance Department has supplied us with a gun and pointing instruments which, to say the very least, are not surpassed by those in use in any army in the world. It only remains now for the three fighting arms of the service to learn by actual practice how best to render that mutual assistance and coöperation on the field of battle, without which disaster is sure to follow when we are called upon to render an account of our stewardship in the game of war.

THE SIGNAL CORPS WITH DIVISIONAL CAVALRY; AND NOTES ON WIRELESS TELEGRAPHY, SEARCHLIGHTS, AND MILITARY BALLOONING.

By Captain WM. MITCHELL, Signal Corps.

IN the past, when the cavalry of the United States army was split up into small detachments, patrolling the Western plains, and later, when housed in snug posts, the subject of the rapid transmission of information during active operations, although considered at times, received only passing attention. In 1898, when of a sudden we were awakened from our period of inactivity, the necessity for the rapid transmission of information at once made itself felt. First, in the United States, then to the points of disembarkation of the armies on foreign soil, and then within the armies themselves in their campaigns. What was done along these lines by the army of the United States is now history, but in this as in many other ways the army was woefully lacking in preparation, and the showing made by the Signal Corps during the Spanish War was remarkable under the conditions. The whole subject had been allowed to sleep, as it were, since the Civil War, and although studied by a very few, the army at large knew nothing as to what could be expected from the Signal Corps. Not so with the European armies. These had devoted their thoughts, not only to theorizing upon what might be done, but to actually putting their doctrines into practice.

The subject of permanent lines of information (permanent or semi-permanent telegraph lines) in the rear of an army and the organization for keeping them up with the main body was well worked out, especially by the Germans. In fact

during the Franco-Prussian War, the semi-permanent and permanent telegraph lines were such a help that General Von Moltke said: "Without the telegraph we would not have

JAPANESE SIGNAL TRANSPORTATION.

taken Paris." Since the Russo-Japanese conflict the necessity for the rapid transmission of information has become more apparent, not only along the lines of communication,

but between the various parts of an army during active operations, and especially with cavalry acting in front or on the flanks of the army to which it is attached. The methods by which these things may be done and the extent to which they may be depended upon by those most concerned is the province of this article.

First, in order to accomplish our purpose, namely, to carry back the information which the cavalry gains to the commanding general of the force with which it is acting, we must consider the organization of this force, how the cavalry is organized, how rapidly it moves, how far it is to act in front of the army to which it is attached, and along what avenue of advance the slender thread of steel and copper upon which the whole problem hangs will be the best protected from interference of the enemy. Next, we must consider the signal apparatus best qualified to obtain the results desired, and lastly, the means of transporting it so that it may be conveyed there quickly enough to be of use when desired. This transportation must also be able to follow any road or trail which the cavalry of necessity must make use of.

We are led to believe at present that the principal functions of the cavalry itself are to obtain all the information possible about the enemy and the terrain; to screen and to keep the enemy from obtaining information about the force with which it is acting; during an action to be used offensively either on a flank or rear of the enemy; and acting alone, for raids, attacking convoys or cutting lines of communication. The greatest benefit derived from cavalry is what it finds out about the enemy. If this information is not transmitted rapidly to the officers for whose use it is intended, the object of the whole matter is to a great extent lost. To get this information in quickly and with the greatest economy in men and animals is one of the most important things. In former wars nearly one quarter, and in some cases more, of the cavalry forces was used for conveying dispatches and acting as couriers, which now seems preposterous. In fact, every mile of buzzer line means more cavalrymen available for their proper work, and the duty of the Signal Corps is to transmit

this information to the proper parties by whatever means may be available. When an army first leaves its point of mobilization for the purpose of marching into the enemy's country and attacking him, if it is definitely known that he is at a great distance and that none of his cavalry is near, the cavalry will keep to some good road and march probably not to exceed four to five miles per hour. Considering that we are acting with a division (as prescribed in our field service regulations) it would probably be necessary to keep only the commander of this cavalry regiment in communication with the division commander at this time. When it becomes necessary to begin screening operations and for the cavalry to cover a much greater front, it would probably be found necessary to keep the commander of this regiment not only in communication with the division commander, but also with each of his squadrons.

In other words, four stations would be necessary with the cavalry alone, and in this case the lines of information must have a maximum mobility of from eight to ten miles per hour, and enough equipment with the parties operating them so that the supply of wire will not run short until resupplied from the signal companies in rear of the cavalry or from the reserve signal train of the division. At present we know of no instrument or appliance which in itself is able to surmount all accidents of terrain and weather. Nor do we know anything which will instantly transfer the thought of one individual to another. Consequently we of necessity have to use various appliances to meet different conditions; and all signals take time. These appliances are generally divided into two classes: visual signalling instruments and electrical signalling instruments. Every officer should bear in mind in a general way the limitations of each means of communication, so that in case one or more are available he may be able to decide instantly how the message should be sent in order to reach its destination in the shortest time.

The field visual signalling apparatus of the U. S. Signal Corps consists of three principal instruments and some others used as adjuncts. These are the flag, the heliograph, and acetylene night lamp; smoke rockets, sequence rockets,

and bombs are also used. The flags are made of light durable cloth and are issued in three sizes, 2x2 feet, 4x4 feet, and 6x6 feet; the last is seldom used at present. These flags are attached to staffs from eight to twelve feet long, depending on the distance to be signalled over. In general, the greater the distance the longer the staff should be, so as to give a greater arc when swinging the flag. The flags are of three colors: white with a red center, red with a white center, and black with a white center. The colors to be used depend upon the background of the signaller, the greatest contrast between flag and background being necessary. A four-foot flag on a twelve-foot staff can be read clearly with field glasses up to seven miles on a good day. Its rate of operation in the hands of experts will range between three and four words per minute. Fog, darkness, rain and other adverse conditions of weather reduce its working distance and rate of operation. The flag is the simplest, oldest and slowest method of signalling employed at present. Its principal use is for working across impassable objects, broad rivers, with vessels of the navy, or where wires for various reasons cannot be strung.

The heliograph is an excellent signalling instrument when proper conditions for its use prevail. The heliograph consists of a mirror with which the sun's rays are reflected from the signaller to the distant station, and so arranged that this light may be flashed, thereby making it possible to send messages in any code desired. Heliographs are so arranged that the mirror which is to reflect the sun's rays can be sighted at the distant station and then moved so that the rays of the sun will be reflected to it. It only requires a minute to make this adjustment, as it is called, for distances up to fifteen or twenty miles, if the location of the station to be called can be identified. Its rate of operation is from five to twelve words per minute, according to the code used, and its ordinary range on a clear day is as far as the line of vision extends. Heliographs have been used over distances greater than one hundred and eighty miles. For successful working, both heliograph stations must have the use of the rays of the sun; clouds, fog, rain, etc., impair its usefulness. When proper conditions for heliograph work prevail, this in-

strument is especially useful to the cavalry, as it occupies little space and can be put into action quickly when required. In countries such as South Africa and India great use has been made of the heliograph by the English.

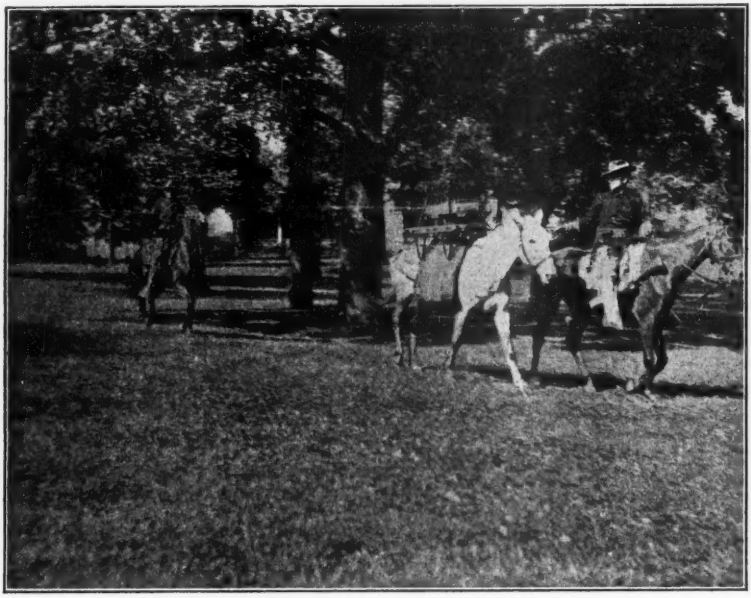
The field acetylene lamp, the latest addition to visual signaling apparatus, can be read up to fifteen miles with the naked eye. Fog and rain and bright moon interfere more or less with it. But, as conditions are more uniform at night than in the day time, this is a very reliable instrument. It can be worked by experts from five to ten words per minute.

Three kinds of rockets (the sequence, light and sound, and smoke) and one kind of bomb are used by the Signal Corps. The sequence rocket is so arranged that it can be loaded with different colors, and four lights in sequence may be displayed. By using the Meyer code any letter or number may be signalled with one rocket. The lights used are red, white and blue, corresponding to the colors of the national emblem. Red signifies one, white two, and blue three. A good sequence rocket attains an altitude of 1000 feet. The light and sound rocket is used for the purpose of attracting attention or indicating a prearranged signal. It attains about the same altitude as a sequence rocket, discharges with a loud report, and displays a white light. The smoke rocket is used in the daytime, and is arranged so that upon exploding a deep yellow smoke is displayed for several seconds. It attains about the same altitude as the others. Rockets are used for signalling across impassable places to indicate movements that apply to a whole organization, and can be used by a party that is in thick timber or a declivity when no elevation can be attained for direct signalling. Rockets can be read at a distance of about six miles, weather permitting. Care has to be used in rocket signalling when near an enemy, as the positions of the troops might be indicated to him. On the other hand, by judicious use he may be deceived. Bombs attain an altitude of about 500 feet, give a considerable report and send out a cluster of red or white lights. They make a greater display

than rockets and are used for calling attention or indicating a prearranged signal.

The field electrical instruments of the Signal Corps consist of the Morse relay, the telephone and the buzzer.

The buzzer is the best field instrument for all around service; it is very light and easily carried; it can be used for



PACK REEL, U. S. SIGNAL CORPS.

many miles over barb-wire fences, over bare wire lying on the ground and even through breaks in the wire itself. The Morse code is used with it, and its rate of working is about twenty words a minute. It is also supplied with a telephone transmitter, and when the wire is good enough it can be used as a telephone.

The field telephone is very much like the commercial instrument used at present, except that it is lighter and more compact. It is used for short field lines, with artillery for fire control purposes, and in camp telephone systems.

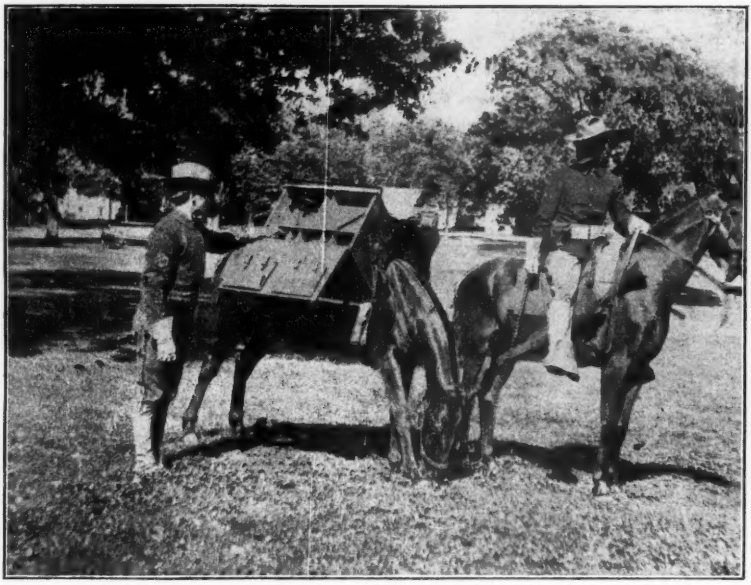
The Morse relay is used on the semi-permanent lines which follow the division, along the line of communications. It is of the same type as those used by the large telegraph companies in the United States. It is worked at about thirty words per minute, and with a good line is the fastest means of transmitting information.

Three general kinds of wire are used: bare iron wire, weighing about one hundred pounds per mile, is used for lance lines. Twisted core heavily insulated wire, weighing about one hundred pounds per mile, called "field wire," is used for rapid movements or deployments. "Buzzer wire" weighs eight pounds per mile, and is used for small rapidly moving columns off main lines of advance or wherever a few men only are available for carrying out the line. It can be reeled out very rapidly, but is easily broken by moving troops.

In the organization of signal troops acting with the cavalry, each party or squad has visual signalling instruments, "field wire" and buzzers, or "buzzer wire" and buzzers, so that it may be able to signal visually or electrically at all times. It has been found that four men are required for the efficient handling of both visual signalling stations and electrical stations. These squads, as they are called, are mounted and armed the same as cavalry except that in place of the saber a machete (for clearing away brush, etc.) is carried. The transportation consists of two-wheeled reel carts provided with winding up gears, each of which holds from ten to fifteen miles of strong insulated wire. These carts are used along roads. Pack transport carries the material and in addition pack reels (as shown in cut) and squad boxes (as shown in cut). The pack reels hold one and one-half miles of wire and are replenished from the other pack animals. Each squad box holds two buzzers, six miles of buzzer wire, one heliograph, one night lamp and one flag kit, besides the necessary line tools, stationery, etc.

A mounted company of the Signal Corps which would accompany the cavalry force of a division (this is not authorized by law nor provided for in the field service regulations) should consist of three officers and fifty-five men. This or-

ganization permits of the use of twelve squads, besides the first sergeant, quartermaster sergeant, blacksmith, cooks, etc. This number of squads is divided in half, and each of these six squads is called a buzzer section and is under the command of a lieutenant (it has been found that in practice this number of mounted signal men is about the maximum which can be handled efficiently by a captain). These companies

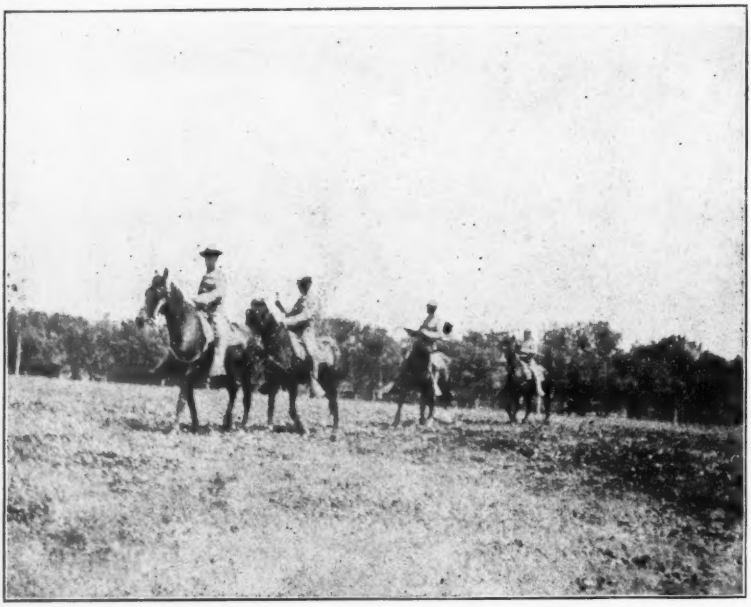


SQUAD BOX, U. S. SIGNAL CORPS.

should be furnished with four reel-carts and one pack train of twelve packers and sixty-four mules. The complete wire capacity of this company is sixty miles of field wire and two hundred miles of buzzer wire, besides the visual apparatus.

As the advance of the cavalry takes place in its screening movement, a road of some kind would probably be its central point of reference, on or near which the commanding officer of this force would probably travel. The main line of

information, consisting of field wire, would follow this thoroughfare, the wire being carefully placed where it would be interfered with least, generally in the ditches at the sides of the road or across fences near it. All wire is handled by the mounted signal men, by means of sticks with hooks on their ends. To insure its working a squad of four signal men should be placed every five or six miles to keep



LAYING A BUZZER LINE, U. S. SIGNAL CORPS.

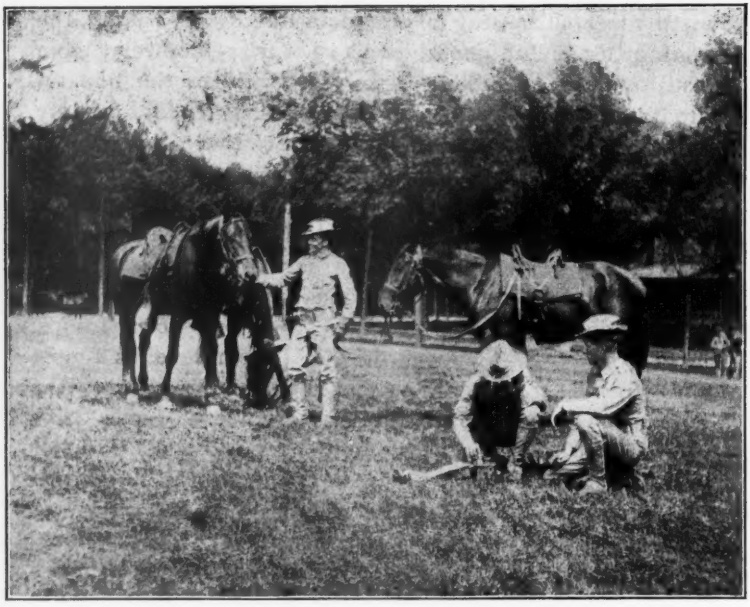
a constant patrol over it. The connections for the parties acting off the main road would be by field wire, buzzer wire, or visual signals, as circumstances demanded. These lines would radiate from some common point on the main road to the subdivisions which they were connecting. As these subdivisions gained headway, and the signal squads accompanying them began to run out of wire, which would be the case after forty or fifty miles had been covered, a new radiating point would be selected on the main road and the operation

spoken of above repeated, the wire already laid either being reeled up or abandoned. As each squad is placed along the main line, advantage should be taken of prominent points in the terrain which command good fields of view, and each signal squad operating with detached parties of cavalry should know the location of these and be ready to pick them up by visual means when necessary. These points could also be used as a rendezvous for the cavalry who are nearest them, and should it become necessary to send couriers back, due to repeated cutting of the main line by the enemy, the signal squads could themselves act as couriers, and relay from squad to squad until the break was passed or the line repaired. This in general in the system necessary for a rapidly advancing cavalry force. It is a comparatively easy matter to keep the line along the road in good working condition, but more difficult to keep up the lines with the flank elements. The wire can easily be laid in good shape as rapidly as the cavalry would march. The hard problem is to keep the supply of wire up with the squad laying it, quickly mend breaks made by the enemy and those by one's own troops. The degree of efficiency of a signal system depends almost entirely on the training of the enlisted men composing the companies and their ability to work together in squads. For this reason it probably takes a longer time to make a soldier an A1 field communication man than to make him an efficient man in most branches of the service.

In addition to the signal company spoken of, which should act directly with the cavalry force itself, another signal company of the same size and equipment would follow directly behind it and reel up the flank lines which the company ahead had laid and used, until a new distributing point was decided on. This company should also relieve the squads of the leading company on the main road or line of advance. As it is necessary for the leading company to place a squad every five or six miles along the wire when close to the cavalry screen, it can readily be seen that either the distance between these squads must be vastly increased, thereby rendering communication more apt to be interrupted, or other squads must take their places and allow them to go ahead,

and also feed them, as it were, with more wire. This is the function of the second mounted company of the Signal Corps with a division during screening operations.

In general the communicating system must consist of wires and electrical signal instruments, as electrical apparatus is now much more efficient than visual. With the number of men organized as noted above it is an easy matter to run the wire rapidly, and an easy matter to handle



BUZZER STATION, U. S. SIGNAL CORPS.

the instruments fast enough to do all the work required and more; the difficult part of the programme is to keep the enemy from cutting these wires too frequently. If they are only cut once or twice per day and only short stretches taken out, communication would be interfered with very little, but if cut several times per day and long stretches of wire removed, it would of course be harder to keep it up. I have often heard it said that if an enemy had an efficient

cavalry, lines of information in the front of an army hostile to it would be literally "put out of business." Undoubtedly this would be so were its adversary very weak in cavalry. But in answer to this it may be said that if the enemy's cavalry is allowed to rove unmolested between the main body of a division and its cavalry screen, then the cavalry screen is not efficient in its role of screening, and, furthermore, if the commander of the cavalry knows how many lines of information he can properly maintain with the force of signal corps given him, he will seldom, if ever, be out of touch with the division commander. The frequent fault is that too many channels of information are attempted, and the men and materials so scattered that none of the lines are entirely successful, whereas if a sufficient number had been concentrated on one, good service would have been the result. The important thing for the commander of the cavalry is to keep in communication with the division commander at all times, and communication to other points should be sacrificed if necessary to accomplish this.

We have now seen in a general way how the lines would be run with cavalry acting immediately in front of the organization to which it is attached. In case cavalry were acting separately for a raid or something of the same nature, the line would be run behind the force in the same manner as before, and probably all efforts would be put forth to keep one line with a column of this kind. As in this case no material except that taken could be expected, unless captured from the enemy, sufficient wire, etc., should be taken when the start is made.

Now let us look at the manner in which the infantry brigades are connected with each other, with the division commander, and with the base, while on the march. For the purpose of maintaining signal communication along a main road of advance, the lance line, or air line as it is called in Europe, is the best. This line is built of bare wire or insulated wire and elevated on field poles, or lances, as they are called in the American Signal Corps. These lances are fourteen feet high and carry an insulator on their top. The holes for the lances are dug with a crowbar. A well constructed

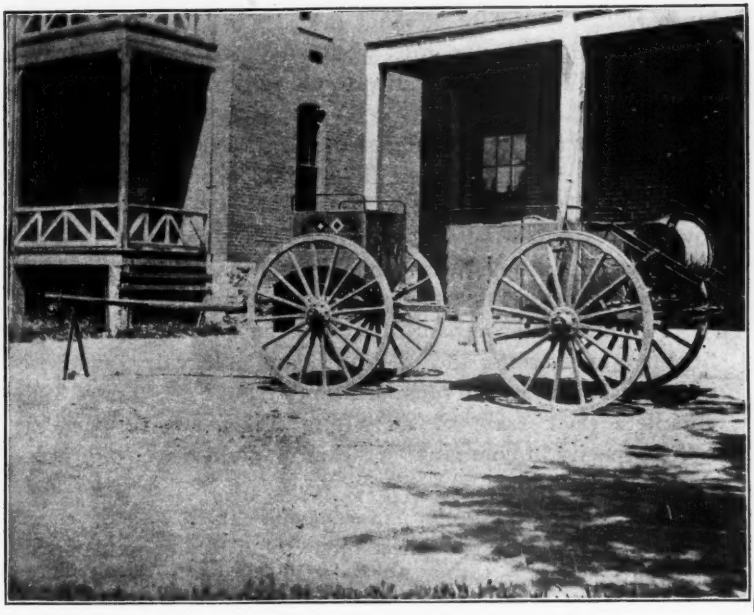
lance line will last for months at a time with very little attention, and, due to its fine insulation, closed circuit Morse telegraph instruments can be used on it. Lance lines can be built at the rate of three miles per hour by fifty men and the proper amount of transportation. These fifty men can keep this up for about seven or eight miles, and must then be relieved by an equal number of others to keep up the pace. So the main line of communication companies of the Signal Corps (as distinguished from the mounted companies) will

FIELD TELEPHONE CENTRAL STATION.
(Several lines radiating therefrom.)

have to consist of about one hundred men, with a sufficient number of mounted men attached to deliver dispatches, and afford means for the division and brigade commanders to cut in on this line and communicate with each other. Stated times should be agreed upon, and at such times all would cut in and converse. While on the march a station would also be maintained continually, somewhere near the head

of the column, to get messages from the base or from the cavalry in front. The signal company building the lance line should be marched well up to the front of the column, about the reserve of the advance guard, so as to have the line up when the rest of the troops pass.

Permanent stations would probably be established at every camping place for the supply trains which follow the division and supply it from its base. These stations would



BATTERY AND WIRE WAGON, U. S. SIGNAL CORPS.
(Capacity thirty miles of wire.)

not be to exceed fifteen miles apart if wagon transportation were used. At each of these route signal stations, a squad (four men) of the Signal Corps would be left. If the army were to occupy the hostile territory for a considerable length of time it would become necessary to build a permanent telegraph line (that is, a line such as railroads or commercial telegraph companies use), where the lance line had formerly stood. Working parties of civilians or other details, under the

noncommissioned officer in charge of these stations, could then do this work rapidly. In case the division with which we are supposed to be acting were a part of an army corps it would be necessary to have what are termed interior lines of information, that is, a lateral connection between the divisions would be made every thirty or forty miles or possibly less, so that if lines were cut in one place they could be reached by another wire. If any passes on the flanks had to be held or strong parties placed permanently at some distance from the line of advance in order to guard the line of communications, lance lines would have to be built to connect them. This would require another dismounted company, so that for the whole division of nearly 20,000 men we will require two mounted companies and two dismounted companies of the Signal Corps. The number of men, wagons, animals, and the capacity of the whole battalion is as follows:

One major, one adjutant, one quartermaster and commissary, one quartermaster sergeant, one commissary sergeant.

Two mounted companies, each to consist of three officers, fifty-five men armed and mounted same as cavalry, machete in place of saber. Transportation: Four reel-carts, one complete pack train of sixty-four mules, twelve packers. Wire capacity of company, sixty miles field wire, one hundred and fifty miles buzzer wire.

Two dismounted companies, each to consist of three officers, one hundred and ten men, twenty-five men of the above number being mounted, armed same as mounted companies. Transportation: Four combination battery and wire wagons, four lance trucks, four escort wagons. Wire capacity of company, one hundred and twenty miles lance line, fifty miles buzzer line.

Battalion total, fifteen officers, three hundred and thirty-three enlisted men.

Battalion line capacity, two hundred and forty miles lance line, one hundred and ten miles field line, four hundred miles buzzer line.

Total animals, one hundred and seventy horses, two hundred and fifty-six mules.

It will be noticed that the per cent. of signal troops is about two, the smallest that possibly can be used for efficiently handling the electrical and visual signalling of a division, not taking into consideration balloon work, searchlight work or wireless telegraphy. It will be noticed that although the personnel of the whole battalion is scarcely greater than some of the European companies, its range of action, or its wire and line capacity, is about twenty times as great as most of them.

This is due to the fact that more weight is pulled by the animals (the greatest is one thousand pounds per horse with the lance train) and the materials and wire are somewhat lighter than others. It might be well to say at this point that the above organization is not authorized by law, but it will have to be, or something similar to it, if a war of any magnitude comes upon us.

A discussion of present methods of military signalling would be wholly incomplete without some allusion to wireless telegraphy, of which so much is expected, and which so far has done so much toward the solving of some of our hard problems. A brief allusion will also be made to field searchlights and balloons, as these will be used to a very great extent in future wars, and although not so intimately associated with the cavalry as the information part of signal corps work, it is thought that they will be of interest.

Wireless telegraphy was talked of and attempted more than one hundred years ago, but not until 1896–7 were any good results at long distance obtained.

Beyond the fact that the most successful systems use Hertzian waves, which are closely allied to light in the nature of their speed and vibration, and are supposed to be transmitted through the ether, little as to the exact action of these waves under different conditions is known. The general effect is well understood, but the exact manner of their gliding around the earth, their reflection from substances, their finding some paths easier than others to travel along over the earth, etc., are not exactly understood.

To generate these waves a charge and discharge of a conductor, such as a spark from a Leyden jar, is necessary, and

it is pretty definitely established that in general the higher the antennæ for aerial wire the longer the range of the ap-

GERMAN WIRELESS TELEGRAPH EQUIPMENT.

paratus. So the sending apparatus consists of an induction coil or a transformer which, when the proper kind of an elec-

tric current is sent through it, causes sparks to be produced between the aerial antennæ and the other spark terminal, which is generally grounded. The apparatus for receiving also utilizes an aerial wire, and a coherer, or an electrolytic cell which is affected by the Hertzian vibrations, and these are reproduced in a telephone receiver or a telegraph relay.

The Siemens-Braun field wireless apparatus used by the Germans and others is shown in the cut. It utilizes kites or small balloons for raising its antennæ, and its range is about thirty miles.

It seems evident that the great benefit to be derived from wireless telegraphy, in a military way, lies in the fact that no wires have to be strung behind the force using it, and that no time has to be taken up in establishing a line or maintaining it in a hostile country. It is comparatively easy to keep up a line with the main body of a division and along its line of communication, for if these cannot be guarded the division cannot be supplied. With the rapidly moving cavalry far in front and on the flanks, however, it is harder to keep the wire up. The cavalry is the arm most to be benefited by an efficient wireless service. With these objects in view, an attempt was made last autumn, at Fort Leavenworth, Kansas, to obtain a wireless telegraph equipment which would pack on one mule and be capable of working fifteen miles. As the weight has to be limited to about 250 pounds in this case, a little difficulty was encountered at first, but nearly every experiment was a success, until the instruments shown in the cut, and called the Squier-Mitchell field wireless outfit, was the result. The antennæ are composed of wire weighing about ten pounds per mile, and are raised by kites or small balloons. These are elevated very rapidly when a station is opened. The receiver and synchronizer, or tuner, are so arranged that when not sending they can be switched on to the antennæ. This apparatus has received whole messages from the Gulf of Mexico, and has transmitted to Kansas City, a distance of about twenty-eight miles. The receiver is extremely sensitive, and with the tuner admits of cutting certain stations out, or selecting one when several are sending at once. Due to the weight of electric generating apparatus

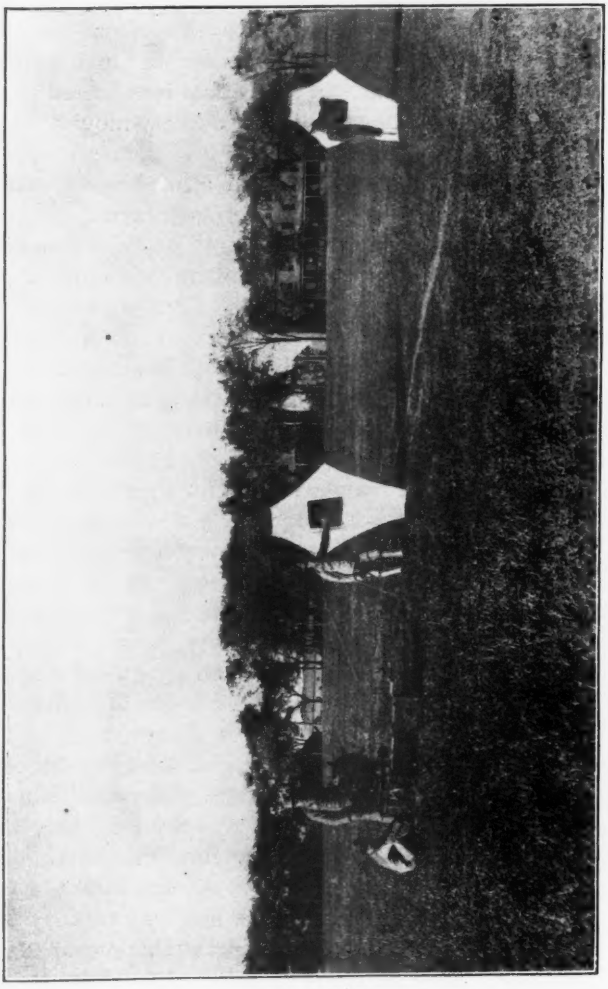
PACK EQUIPMENT, FIELD WIRELESS STATION, U.S. SIGNAL CORPS.

the supply in this regard has to be limited with a pack outfit, consequently reducing its sending ability. Although not tested as fully as it will be in the near future, it is pretty safe to say that this apparatus will give good results with rapidly moving columns not over thirty miles away from another station. As a matter of fact few parties will be much farther than that in a direct air line. A great deal is expected from wireless telegraphy, in connection with rapidly moving cavalry columns.

The use of searchlights with field armies is comparatively recent, and more is constantly being learned as to their usefulness as experimenting and use continues, and as their weight is decreased and consequent mobility is increased. The single light is run by a steam engine driving a dynamo, both of which are mounted on one wagon. From a dynamo the power is transmitted to the light by a cable some hundreds of yards in length. The light itself is mounted on a wheel base with a bullet proof steel shield surrounding it. An appliance is placed over the face of the light or near the carbons so that the light may be flashed for signalling. The power of these lights is such under favorable conditions that they can illuminate objects at distances varying from seven to ten miles. For practical purposes objects can be brought out clearly for minute observation at about the same distances that they are shown by daylight, namely, from two to five miles. At a distance of two miles, with most field searchlights, the diameter of the illuminated space is about 200 yards.

In observations with the searchlight, considerable experience is necessary, as objects which by day are illuminated from above present a different appearance when illuminated by rays parallel to the earth from the searchlight. The principal difference between daylight and the beams of a searchlight is the character of the shadows cast by the objects illuminated. In searchlight work the shadows are very large and black. If an object is illuminated from the rear it is nearly as difficult to distinguish what it is as one lying between the sun and an observer. In the case of artillery and infantry firing upon a searchlight when it is in operation, it

has been established that at their mid or long ranges the searchlight has little to fear, as it is extremely difficult to get the range. Should an enemy have a searchlight, it would



FIELD WIRELESS APPARATUS, U. S. SIGNAL CORPS.
(Ready to begin work.)

therefore be necessary to approximate its probable position during the day, and estimate the ranges accordingly, if it should become necessary to fire on it at night.

In order to obtain the best results from searchlights in the field, they should be capable of covering the whole front of the organization employing them with a continuous circle of light. The searchlights on ships of the navy are arranged to do this.

This would hardly be practicable in the field, as too many lights would be required, and the cost probably would not be commensurate with the result. One or two field searchlights will probably be found necessary with each division of troops, and will be used for observation beyond the outposts, keeping watch of roads, lines of communication, signalling, and of the positions of the enemy or his disposition preparatory to a night or morning attack. What is of considerable advantage in searchlight work is the fact that troops at night move scarcely half as fast as they do in the day time, thereby making it possible to observe them twice as long while marching a given distance at night as would be the case in the day time. Another mode of applying the beams of the searchlight is to place two of the lights at some distance from each other and cross their beams near the earth some distance to the front. The triangle formed by the line between the lights and the point of intersection of the rays is practically invisible to a person in front of it, even if the beams of another searchlight be directed against it. By this means entrenchments may be constructed within the perimeter of this triangle during the night which the enemy will be unable to see. This method has been applied successfully by the Japanese in their campaign against the Russians. Photography can also be used in conjunction with the light, and when not in use with a searchlight the dynamo could be employed to furnish light for various works or for charging wireless storage cells. The personnel of a field searchlight plant should consist of two officers used to observing with it, and who should do all the observing, three noncommissioned officers and nine privates, three of whom should be mounted for delivering messages. The enlisted men would act as electricians, machinists, light operators, firemen, and tend to the signal telephone or other signal

communications placed with the light. There should also be two teamsters.

The application of balloons to warfare has been of long standing, but due to the former weight of the appliances necessary for their operation and maintenance, they have not been used in the past to the extent that they will be in the future. The spherical and the German, or "sausage" type, as it is sometimes called, have been thoroughly tested, and their usefulness and limitations have been definitely established. So far no organization for balloon work has been authorized by law in the United States army. The Germans have a very efficient organization, and practice with the balloons continually. They use the spherical balloon for free ascensions, and the sausage balloon for captive work.

The organizations for handling the balloons are called companies, and have the following number of officers, men and wagons: Five officers, twenty noncommissioned officers, one hundred and thirty men. They are divided into seven groups:

The balloon group: Two noncommissioned officers, thirty-eighty men.

The gas group: One noncommissioned officer, twelve men.

The car group: One noncommissioned officer, four men.

The cable group: One noncommissioned officer, four men.

The telephone group: One noncommissioned officer, four men.

The advance guard group: Eight noncommissioned officers, thirty men.

The reserve group: Four noncommissioned officers, sixteen men.

The drivers group: Two noncommissioned officers, twenty-two men.

Twenty-two wagons, nine for materiel, generating and compressing apparatus, twelve for gas, one, windlass.

The balloon group unfolds, inflates, and gets the balloon ready for the ascension. The gas group attends to the application of the gas. The other groups are employed as their designation indicates. The advance guard prepares the

ground where the balloon is to be inflated and then deploys as skirmishers to the front, to keep away small parties of the enemy, marauders, etc.

The men in the reserve group are detailed as sentinels, orderlies and patrols. In addition to the wagons mentioned above, other wagons known as the reserve train are also attached. While acting with a large body of troops, the balloon company should be marched near the head of the column and be ready to begin filling at a moment's notice. The discovery of the enemy in force would, under ordinary circumstances, be the proper moment for beginning to fill. It must be remembered that the balloon upon rising will indicate to the enemy the approach of the advance guard, but as it takes about thirty minutes to fill the balloon, the organization with which it has been marching will have gained about one mile distance to the front, and presumably will continue advancing. The principal things to be learned by the observer are the roads over which the enemy is advancing, the strength of his troops, the length of his columns, the length of his lines, the position he occupies, and details of a like nature. These things should be immediately reported clearly and briefly. On the basis of these reports instructions will be given by the commander for further dispositions.

A balloon may be used as a means of reconnoissance during the entire engagement when other means are impossible. Regarding the effect of hostile artillery fire against a balloon, it may be stated that if the distance is less than three miles the safety of the balloon is at stake; if at greater distance and one thousand feet in the air, it is practically immune from effects of hostile field artillery. Frequent changes of position render it more difficult to hit. The ordinary maximum distance at which reconnoitering can be carried on is about five miles, although it has been stated that with a thirty power telescope the different branches of the service have been distinguished at a distance of nine miles. Under ordinary conditions of atmosphere, however, the maximum distance is about five miles. It may be noted here that a balloon sent up in the center of a division in line would be able to cover its whole front in its field of observa-

tion. Theoretically a balloon company should be attached to each division. As can be seen by the foregoing the principal uses of the balloon are in the attack, but it may also be used with effectiveness on the defensive providing the enemy's artillery can be kept at a distance of something more than three miles. In retreat the balloon would also be useful if towed along the line of retreat with sufficient speed to keep it away from the enemy. This maneuver would probably result in the loss of the balloon, but might be compensated for by the results obtained.

Photography plays an important part in the balloon reconnoissance. The exposure must be instantaneous, as there is always more or less vibration to a balloon. As it is difficult to see the image of the object to be photographed in the finder of the camera at the distance usually met with, a good many devices have been tried. Probably the most successful is an arrangement resembling the stock and sights of a rifle. The camera is attached to one side of this, with its focal axis parallel to the line of sight; the trigger is so arranged that by pulling it an instantaneous photograph will be made. This apparatus is then set, the object aimed at and the trigger pulled. These photographs serve as good maps of the locality taken. An approximate scale can be made if the photographs are taken vertically downward, which can be assured by the spirit levels on the camera. Then taking the balloon's altitude, if captive by the cable, if free by the barometer, for the base of the right angle triangle, the angle formed by the hypotenuse with the base would be one-half the angle of the camera's lens; the perpendicular would be the distance from the center of the picture to its edge. It is said that with a telephoto lens the outline of a fortress, number of guns and their position can be taken at a distance of six miles. To one unaccustomed to the perspective from a balloon, some difficulty is experienced, as the image resembles a bowl when looking down at it. In other words, the edges of the picture appear as if they were raised, and the part around the center looks as if it were sunken. This also applies to the image produced on the eye by looking down from a balloon. Balloons are

used to signal from by flags, lights and along a cable by telephone, and recently for raising the antenna of a wireless telegraph equipment. Nearly everything said concerning the observations which can be made from the captive balloon can also be said about the free balloon, the great drawback being the fact that generally no communication can be had until the landing of the free balloon, unless carrier pigeons are used. The principal use of a free balloon is in sending it out of a beleaguered city to convey information to its own country beyond the lines of the attackers, or by the attackers in sending balloons over a besieged city for observation or to drop explosives.

As the direction of flight of free balloons depends on the direction and strength of the wind, they can only be used with good results at favorable times.

Dirigible ballooning has not been practically applied up to the present by any army during active operations, and I make brief mention of it here merely to convey an idea of what has been done in this field, and what will undoubtedly prove to be a fact in the future. At present there are two distinct schools af aerostation; one holds that the navigation of the air should be made in the same way that birds sail, namely, the aeroplane principle, of which school the late Professor Langley of the Smithsonian Institute in Washington was one of the foremost exponents. The other school holds that the airship should be made on the same principles as one on water, namely, that it should have an instrument for holding it up, and an impelling force to drive it on, analogously to the hull and propeller of a steamer. Of this school, Santos Dumont, a Brazilian, is the foremost exponent, and as he has accomplished more in a practical way than any other person, the following notes on his performances are given. With his "No. —" ship, Santos Dumont has traveled twenty-seven miles per hour over a measured course in still atmosphere. His "No. 7," known as the racing airship, is built to go more than twice this speed, and can probably be relied on to go fifty miles per hour, although I have no data showing that it has been done. This means that an airship can rise, maneuver and alight in any atmospheric condition

short of a hurricane. As to its application in war, all that has been said of the captive balloon would apply to the dirigible balloon, except that communication with the earth would be more difficult. It could course at will over a battlefield, carry messages out of a besieged fortress, or sail above a beleaguered place, immune from the action of men on the earth's surface. By towing another balloon loaded with explosive, several hundreds of pounds of guncotton could be dropped from the balloon which it is towing in the midst of the enemy's fortifications. It may be said at this point, that dropping a pound or two would probably disrupt any balloon envelope as made to-day, due to the tremendous speed with which the balloon would instantly rise. Ballast has to be handled carefully, generally not more than a pinch of sand or a teaspoonful of water ballast is to let go at one time. As no concrete organization has been adopted for dirigible ballooning, it is not mentioned. The French military authorities are especially busy on this subject, and so far are probably the leaders. One interesting fact connected with dirigible balloons is, that when cruising over a body of water at a height of some one hundred or two hundred feet, objects in the water can be perceived at a great depth; some day, therefore, we may see dirigible airships acting as scouts for the navy to detect the presence of submarine vessels. Conflicts no doubt will be carried on in the future in the air, on the surface of the earth and water, and under the earth and water.

PROBLEMS.

AS stated in the last number of the JOURNAL (No. 59), we have concluded to publish in each issue a problem that has been given, during the present course, by the Department of Military Art to the student officers at the Infantry and Cavalry School. The solution to each problem will be given in the following issue of the JOURNAL. Solution to Problem No. 1 appears in this issue, page 699.

* * *

DEPARTMENT OF MILITARY ART, INFANTRY AND CAVALRY SCHOOL.

Course in Security and Information, 1905–6.

MAP PROBLEM NO. 2. OUTPOSTS.

Situation:

A Blue force at Spencer, fifteen miles northwest of Swanton, throws out a detachment under command of Lieutenant Colonel A——, of six companies of infantry and twelve cavalrymen, to Swanton, to observe and delay the advance of the enemy, who is supposed to be several days' march to the southeast of Vinton.

On reaching Swanton, about 12 M. 1st September, 1905, a messenger passes en route to Spencer, coming from a point twenty miles southeast of Vinton, and reports that a squadron of Blue cavalry has been engaged with a force of the enemy's cavalry all of the day before, and has been forced back four miles to the point from which the messenger started and partly off to the east of the main Vinton-Swanton road. Lieutenant Colonel A—— decides to camp in Swanton woods,

two hundred and fifty yards west of Bellevue Hill, and details Company A and the first platoon of Company B, also the twelve cavalrymen, all under command of Major X——, as an outpost.

Required:

1. A brief statement of what military features of the country in the direction of the enemy can be seen by Lieutenant Colonel A—— from the top of Bellevue Hill.

2. The substance of Lieutenant Colonel A——'s outpost orders.

3. Briefly, the substance of the first orders of Major X—— to his subordinates.

4. Indicate on the map the day position of the different elements of the outpost. In colors indicate what changes you would make, if any, at night.

5. Make schedule showing the number and rank of the men in each element (sentinels to be included in the group from which they are posted).

6. How would you use your cavalry?

(NOTE: Orange and Onion Rivers are the same stream, flowing just off the map, having low banks. It is three feet deep. The organization of these troops is that prescribed in Drill and Field Service Regulations.)

APPROVED SOLUTION TO PROBLEM IN JANUARY (1906) JOURNAL.

(See Map in Last Issue.)

Department of Military Art, Infantry and Cavalry School.

Course in Security and Information, 1905–6.

MAP PROBLEM NO. I. PATROLLING. CAVALRY.

First Requirement.

1. *The country to the south* is open ground, sloping gradually to Corral Creek, distant about eight hundred yards, and eighty feet lower than the top of Pope Hill. Corral Creek flows east and empties into the Missouri River. There are sparse woods on the south bank of the creek, where the ground rises for three hundred yards to the top of Grant Hill, twenty feet lower than the top of Pope Hill.

Metropolitan Avenue, running east and west on a ridge, is on the north side of Leavenworth, seventeen hundred yards distant. The houses of Leavenworth cut off further view to the south.

To the southwest, open ground slopes gradually to Corral Creek, nine hundred yards distant, where a branch joins the creek from the north; beyond the creek the ground slopes upward for about four hundred yards, and is wooded. The rise continues to the new United States Penitentiary, a distance of about eighteen hundred yards, where the elevation is the same as the top of Pope Hill.

A good, broad road (Grant Avenue) running north and south a hundred yards west of the top of Pope Hill, connects Fort Leavenworth and Leavenworth; this road has good grades and is bridged over Corral Creek and the Union Pacific Railroad.

An electric street railway line just west of and parallel to Grant Avenue, crosses Corral Creek and the Union Pacific Railroad by a trestle. Deep cuts appear along the electric line.

To the southeast the ground slopes gradually to Corral Creek and to the Missouri River.

The Union Pacific Railroad runs parallel to and north of Corral Creek at an average distance from it of a hundred yards.

The Missouri Pacific Railroad, double track, runs along the west bank of the Missouri River, which is twelve hundred yards distant, and flows south.

The slope from the junction of the Missouri River and Corral Creek to the reservoir of the Leavenworth waterworks is steep, distance to the reservoir being about fourteen hundred yards.

A road runs north and south to the town, crossing Corral Creek nine hundred yards distant.

The face of the country is much cut up by gullies and washouts, especially east of Grant Avenue.

2. See map* for positions of members of the patrol. The soldier near the officer would hold the officer's and his own horse under cover.

Second Requirement.

1. Thoroughly question and search the man, taking his answers down in writing. I would hold him until it became necessary for other reasons to send a messenger, when I would send him back to the cavalry screen.

Third Requirement.

1. Yes.

2. See dotted line on map* for route.

I would draw in all members of the patrol, except the man at Rabbit Point, who would join the patrol as it passed,

*Due to cost of printing, the position of the members of the patrol and the route from Pope Hill to the reservoir are not given in the JOURNAL. The position of the patrol (Question 2, Requirement 1), is approximately as follows: Two members on the north side of the crest of Pope Hill; one just to the southwest of Rabbit Point; one on the Grant Avenue road, about 150 yards south of Merritt Lake; one west of South Merritt Hill under cover of the ridge (Contour 880). Question 2, Requirement 3: The route of patrol from Pope Hill to reservoir is as follows: Due east from Pope Hill under cover of the woods to Farragut Avenue, thence south on Farragut Avenue to a point 200 yards beyond the bridge over Corral Creek, thence direct to northeast corner of reservoir.

taking position as a rear guard man. I would then proceed by the route indicated on the map. The formation of the patrol would be as indicated, distances in the woods about fifty yards and in the open about one hundred and twenty-five yards.

One man would be sent up the bluff to the north of the reservoir to reconnoiter that place, and one would be sent to reconnoiter the woods south of Corral Creek west of the road after crossing the bridge over Corral Creek.

Fourth Requirement.

1. Remain in concealment and capture the officer and orderly without firing, if possible. Take them at once to Pope Hill. The two prisoners would not be allowed to communicate with each other, and on arriving at Pope Hill, I would question each prisoner, out of the hearing of the other. Take down their answers and send the two back to the cavalry screen under charge of two guards, who will also take the written answers to the questions asked the prisoners, with a message. The guards would be instructed to not allow the prisoners to communicate in any manner whatever. The prisoners would be bound and the best man of the patrol put in charge.

2. See message:

Sending Detachment.	Location.	Date.	Time.
Officers' Patrol, Troop X, 3d Cav'y.	Pope Hill.	8 Sept., 1905.	11:30 A. M.

Received, ————————

No. 1.

To Commanding Officer, Troop X, Third Cavalry, on Kickapoo-Fort Leavenworth Road:

I have seen enemy's sentinels about six hundred yards south of Corral Creek, on high ground west of Grant Avenue. Line apparently extends from Grant Avenue to the west beyond the new U. S. Penitentiary towards south end of southwest hill. Prisoner herewith was captured by messenger. Prisoner was riding rapidly towards Leavenworth. He says he came from Kickapoo, has not been in Leavenworth for ten days, and knows nothing of enemy; also that he saw Blue troop of cavalry entering Kickapoo when he left there at about 10:30 A. M.

Will remain in observation.

X——,
Lieutenant.

The above message would be sent after the capture of the civilian and after I had reconnoitered the enemy's position from Pope Hill. It would be the first message sent.

3. "This man is your prisoner; take him and this message; go back over the road by which we came and turn the man and message over to the troop commander. Do not stop until you have reached the troop. Move at a trot, keep prisoner in front of you, and don't let him escape; shoot him if necessary."

PRIZE PROBLEM.

THE Journal has concluded to adopt the idea of a prize problem, to stimulate work along the line of minor tactics. One problem will be given each issue, and will be called the Prize Problem to distinguish it from the problem published each issue that is taken from the work of the Infantry and Cavalry School. The idea of publishing one problem, taken from the work at the Infantry and Cavalry School, was principally to acquaint officers with the work at the school, as great interest is being manifested in this work at present by officers throughout the army. But the Prize Problem is a matter distinct from the Infantry and Cavalry School problem. Solutions will be received from any officer or soldier in the army or National Guard, and the submitted solutions will be given to the publication committee for the award of the prize. The prize will be ten dollars, which will be forwarded the person sending the best solution immediately on notification to the editor of the committee's action. The JOURNAL is issued the first day of each quarter, and the answer to a prize problem must be in the hands of the editor within six months thereafter; *i. e.*, if the problem appears in the April issue the answer must be received before the first day of October.

The solution will be signed by nom de plume, and accompanying the solution must be a letter to the editor stating the name adopted, which letter must be signed by the party's real name. The editor is not one of the publication committee. That committee at present is composed of Major D. H. Boughton, Eleventh Cavalry, and Captain M. F. Steele, Sixth Cavalry.

It is a part of the instruction of officers to require the deduction of sound conclusions and the adoption of suitable measures for a military situation *exactly as it is given*, notwithstanding apparent inconsistencies, discrepancies, and lack of information. All such difficulties occur in actual practice in war, and may sometimes be designedly introduced into problems.

Officers cannot be given credit for solutions based on *illogical* or *unfounded* assumptions or conclusions *not justified* by the military situation, *as given in the problem.* They are not authorized to *assume* hypotheses of their own. The practice of conjuring up difficulties or possibilities outside of the situation immediately at hand, is a military fault which has brought trouble to some of our best officers in actual war.

The following is the first prize problem:

* * *

MAP PROBLEM.

Attack of a Convoy.

General Situation:

A Red army corps is in camp about ten miles northeast of Addison.* A Blue army corps is advancing from the southeast and has reached a point fifteen miles southwest of Colchester. The Red army is operating in hostile territory. Onion River unfordable. Bridges below Fay's Corners destroyed.

*See map opposite page 697.

Special Situation:

At 6 P. M. June 1, 1905, the mayor of Swanton wires the Blue corps commander that about three hundred Red cavalrymen, escorting a convoy of provisions obtained by foraging west of Swanton, have camped for the night, after a hard day's march, on the Fay's Corners-Swanton road, about three miles northwest of the latter place, and will proceed in the morning via Fay's bridge.

A Blue detachment, consisting of one squadron with one rifle caliber machine gun, under Major A——, reached Colchester at 8 P. M. the same day. An hour later he received a dispatch from the corps commander to capture or destroy the convoy the next day. The dispatch contains all the information given above.

Required:

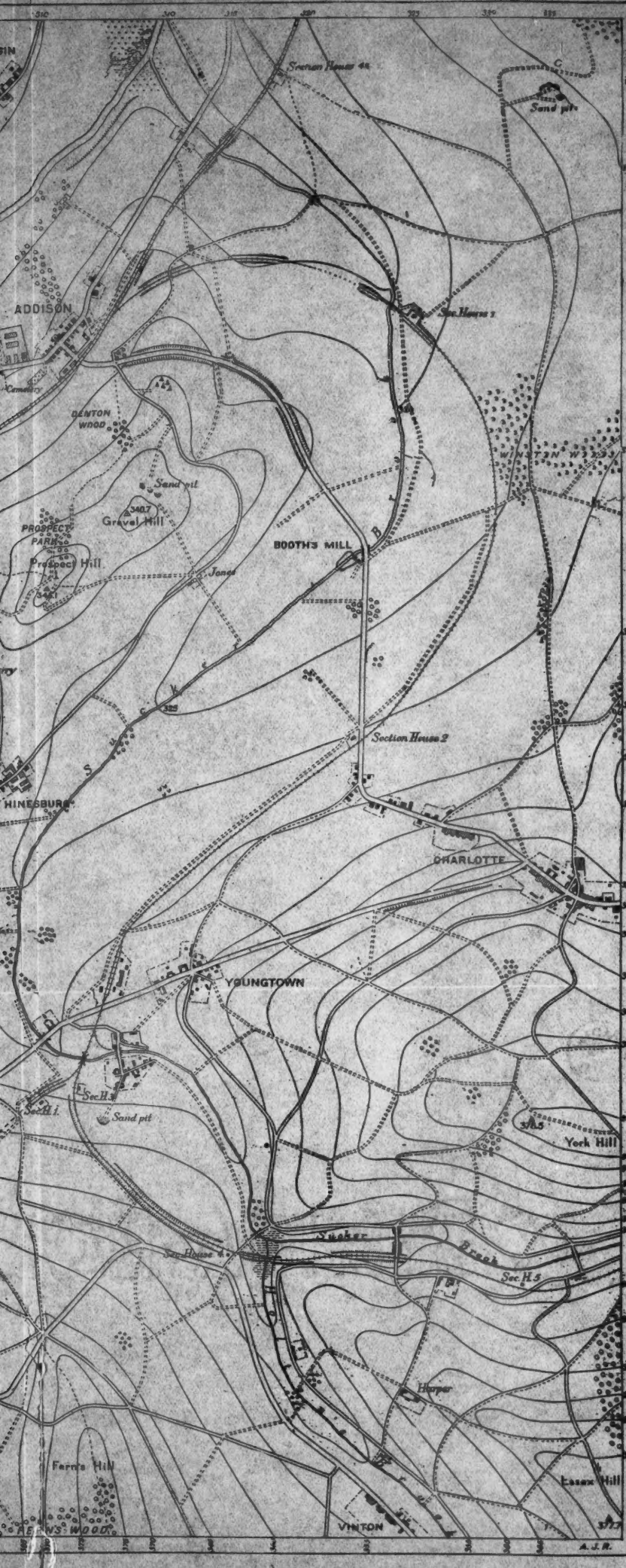
1. Major A——'s estimate of the situation.*
2. His orders for attacking the convoy.

The strength of the squadron is that prescribed in the Field Service Regulations.

*By "estimate of the situation" is meant Major A——'s view or opinion of the situation after he has studied the map and all the information at hand. It would include (1) a consideration of the strength, position, and probable intentions of the enemy, and (2) a consideration of his own situation and of what he proposes to do in order to carry out the order he has received.

MAP FOR INSTRUCTION I

N IN PATROLLING. Nº 1.



SPECIAL CLASS AT FORT RILEY.

IN ordering eight of the recent West Point graduates to Fort Riley, Kansas, for a special course in equitation, the War Department could have done nothing fraught with more good for the cavalry service. Of the one hundred and fourteen graduates in the last class at the Military Academy, nineteen were assigned to the cavalry. Of these nineteen eight were ordered, as above mentioned, to Fort Riley, where they compose a special class in hippology, horse training, equitation and horseshoeing. They finish this course in April and then join their regiments.

For the work in equitation and horse training these student officers provide themselves with, or are provided by the government with an unbroken colt. The plates in this issue show these officers on their young mounts. These colts are three-year-olds, and were first backed November 1st of last year. Attention is directed to their set up and head carriage after four months' work. It is to be regretted that the facilities at Riley are not greater, so that every mounted lieutenant in the army could take advantage of the exceptionally valuable course that has lately been started there. But as with all things with small beginnings we hope to see the school grow until it is as well known as any riding school in the world. It is our belief that young men can receive as much good from the short course there as at any other school in any foreign country for the same length of time. And while we believe in sending officers to Saumur, yet we think this should only apply to those of our officers that hereafter will be detailed as instructors at the practical school at Riley. The sporadic cases in which officers have heretofore been

ordered to Saumur have done the service little good and we hope the above idea will be carried out if ever any more details are made to foreign riding schools.

We became very familiar with the work at Riley last summer through a personal knowledge of the riding instructor, Captain W. C. Short, Thirteenth Cavalry, and were so favorably impressed with what was being done that we have taken every opportunity since to give the army some idea of what is being done in the line of practical instruction in handling and taking care of horses. With this idea in view we secured a valuable article for the last JOURNAL from one peculiarly fitted to know about the work—the secretary of the school. And we print the following plates largely to arouse interest in our one real riding school in the army. We acknowledge our debt to First Lieutenant S. B. Pearson, Ninth Cavalry, for the fine camera photos from which our half-tones were made.

LIEUTENANT J. DE B. W. GARDINER, ELEVENTH CAVALRY.

LIEUTENANT GEORGE DILLMAN, SIXTH CAVALRY

LIEUTENANT CLARENCE K. LYMAN, FOURTH CAVALRY.
(On his three-year-old, "Missouri Girl.")

LIEUTENANT CHARLES L. SCOTT, TWELFTH CAVALRY.

LIEUTENANT WM. A. DALLAM, TWELFTH CAVALRY.

LIEUTENANT JAMES H. DICKEY, FOURTH CAVALRY.

LIEUTENANT RALPH TALBOT, JR., TWELFTH CAVALRY.

LIEUTENANT WM. N. HENSLEY, JR., THIRTEENTH CAVALRY.
(On his three-year-old, "Forrest King.")

BLACKBIRD BELLE

Registry No. 2939

PEDIGREE:

Sire—Forrest King 1462.

Grand Sire—Squirrel King 973.

Dam—Bell M. 2592, by Black Squirrel 58.

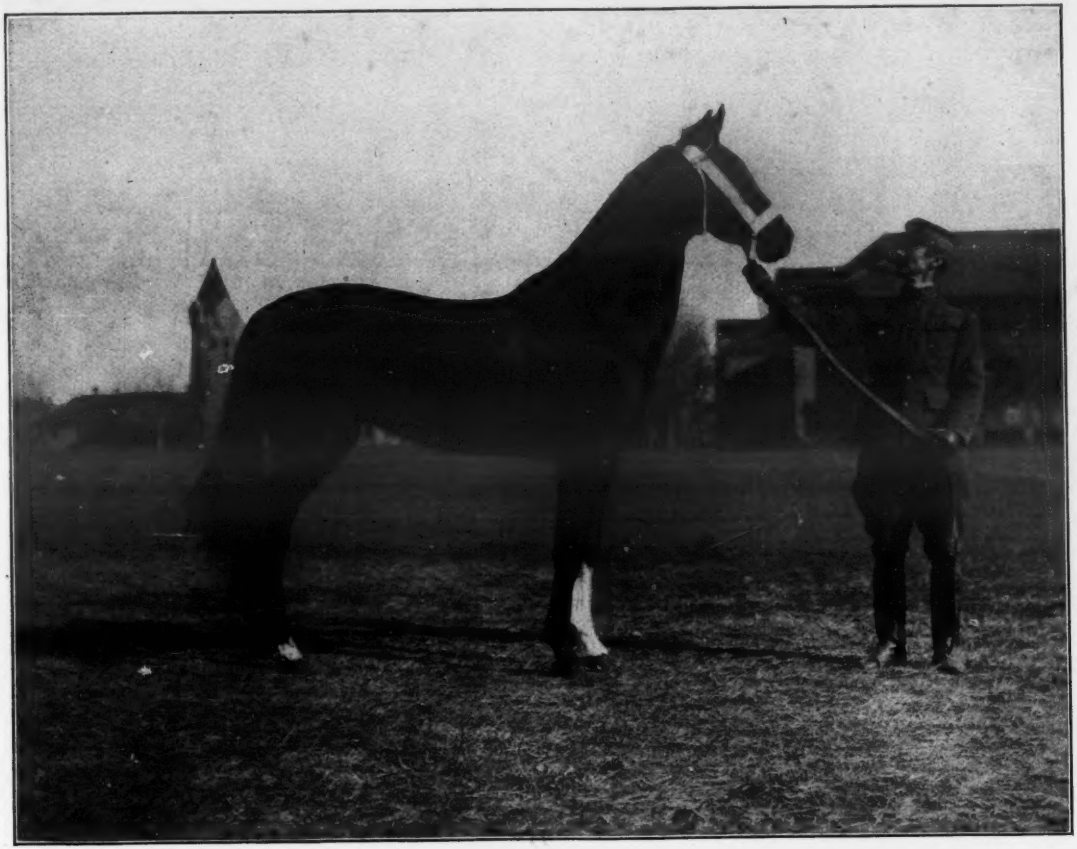
2d Dam—Fannie Buckner, 669 by Sidi Hammet.

World's Fair Prize Winner.

Age 3 years.

Owner, Captain W. C. SHORT, Thirteenth Cavalry.

(One print similar to the one here given, of a horse owned by some member of the Cavalry Association, will hereafter appear in each issue of the JOURNAL.)



BLACKBIRD BELLE.

Reprints and Translations.

THE CHINESE ARMY.*

By Major EDM. VON WITZLEBEN.

THE present war in Eastern Asia, and the contingencies which may complicate its further course, cannot very well be discussed without some reference to the armed forces of China; and Chinese troops, in this connection, have repeatedly been pronounced utterly worthless from a military standpoint. This opinion is decidedly erroneous. Against it stands the fact that German military instructors have for many years industriously and laboriously taught the art of war in China, and that from the year 1902 until the outbreak of the Russo-Japanese struggle, nearly two hundred Japanese officers were employed in the Chinese service to train a serviceable army for their neighbors. Moreover, that army itself has developed men who have inaugurated a system of reforms deserving careful attention.

In order to obtain a correct notion of the rather complicated military system of China, and of the forces available for the defense of the country, we must distinguish strictly between the old and the new armies, and subject each one to an independent criticism. If we leave out of consideration the Mongolian levies (Landsturm) and the Thibetan militia, the old army comprises the Manchu or Banner Troops and the "troops of the green flag," also styled "Provincial Troops." The Banner Troops, originally descendants of the former

*Translated for the General Staff, U. S. A., (from the German) by Colonel J. B. Girard, Assistant Surgeon General, U. S. A.

Manchu invaders of the early part of the seventeenth century, have remained a warrior caste, and stand under the immediate authority of the imperial governors, but in the course of time the integrity of the race has been impaired by the admission of Mongols and Chinese, and they have lost much of their old war-like spirit.

The process of breaking up these Banner Troops has already commenced, and will eventually be completely carried out, but this will take considerable time. For the present, therefore, they cannot be absolutely ignored, and a short description of them may be appropriate in this place.

The Banner Troops are divided into eight corps, of which the first three (yellow, red and yellow, white banners) are exclusively made up of Mongols and Tartars, and constitute the Imperial Guard. Theoretically they are placed under the direct orders of the Emperor, while the other five corps (white and red, red, red and white, blue, blue and red) differ from them in being assigned to the princes of the Imperial family.

The eight banners are organized in twenty-five divisions of very unequal strength. The first division, the Imperial Guard, numbers 3,000 men (infantry and cavalry) and is commanded by twenty-five Mandarins of the first and second class, and three princes, assisted by 1,000 subaltern officers, charged with the execution of their orders. The Guard Division, among its other privileges, enjoys that of a special penal code. The mildest punishment consists in 100 blows from a stick, the heaviest is "slow death," meted out for treason or the crime of "lese majesty" towards the Emperor.

The next nine divisions form part of the garrison of the Province of Pechili. Their exact strength cannot be ascertained. The returns furnished on the occasion of the reviews held every third year, give their number as 150,000 men. In reality the number actually present can hardly exceed 80,000, for individual divisions are greatly reduced through deserters, sick and other absentees.

Divisions 11 to 25 also vary greatly in effective strength. For instance, the Twelfth Division in Shantung numbers

altogether 3,000 men, while the Twenty-fourth which, before the coming of the Russians, was located in Manchuria, had reached a maximum of 30,000 men. The Twenty-fifth Division is charged with guarding the Imperial tombs in the provinces. Altogether these fifteen divisions should muster 100,000 men.

The composition of the several divisions of the Banner Troops with regard to special arms, varies as widely as their numerical strength. The Second Division is wholly infantry; the Third half infantry, half cavalry; the Fourth likewise infantry and cavalry with some twenty batteries; the Sixth is wholly made up of foot artillery; the Seventh is charged with the execution of punishment.

Far worse than the conditions of the Banner Troops of the old army, is that of the Provincial Troops which may be considered as the remnant of a standing army created about the middle of the seventeenth century. They are distributed over the eighteen central provinces of the Chinese Empire as well as over Chinese Turkestan and the District of Peking, and are placed under the authority and the free disposal of the respective governors. Trustworthy returns of the numerical strength of these troops cannot be obtained; they are supposed to number 400,000 men, but as a matter of fact the provincial authorities report these high figures in order to claim from the government in Peking the highest possible compensation for their maintenance, which in great part finds it way to their pockets. Collectively these troops never possessed any military value, nor did they ever fulfill the object for which they were designed, that of preserving peace and order in the land, so that their gradual suppression is already decided.

It is evident, without further argument, that the majority of these armed forces cannot be considered avai able for war purposes in the modern sense, and that it was necessary to create an entirely new army on a modern foundation if the Empire of the middle was ever to acquire military standing and importance. To solve this arduous question an appeal was directed to old Li-hung-chang, who had already proved himself a friend in need, and to whose influence was due the

introduction of the first German instructors to train the Chinese army. Under his guidance, two armies were gradually formed out of the better elements of the Banner and Provincial troops, the so-called Peiyang army, in the Province of Pechili and the Hupei army, in the Province of Hupei, about the middle course of the Yang-tse. These constitute the elite of the Chinese army and are intended to raise the defensive strength of the country to a high level of excellency. Li-hung-chang did not live to see the completion of his work, for he died just as it began to bear fruit, and when order and discipline were being introduced in the ranks of the newly organized forces.

Among the successors of this great statesman, Yuan-shi-kai, the commander in chief of the Chinese troops in the Province of Pechili, has with great zeal and intelligence continued the work of Li-hung-chang, and obtained the most satisfactory results.

This able general's first attention was directed to the work of recruiting among the inhabitants of the lowlands; with that object in view and under the approval of his Imperial master, he issued a proclamation which is not devoid of general interest, and reads as follows:

"1. Soldiers are raised in a country to defend its frontiers and protect its inhabitants. The duty placed upon them is great and important. Consequently slothful men are not permitted to acquire military rank. For the purpose of raising recruits for the army which the government has commissioned me to organize, I consider it wise to adopt the method usually followed in foreign countries; accordingly all prefects and chiefs of districts in the Province of Pechili have been ordered to ascertain how many towns are contained in their administrative territories and the population of each town; furthermore, the elders of each locality are called upon to designate to the authorities a certain number of the inhabitants as suitable recruits. All persons so designated by the elders, must bear an honorable character and possess relatives. Should it come to light that the elders have proposed slothful men or dismissed soldiers, they shall be severely punished.

"2. All persons who have been designated by the elders to the local authorities as suitable recruits, will remain in

their dwelling places until said authorities have sent their representatives to examine and enroll them.

"3. A levy of new recruits will in every case be preceded by a special proclamation of the local authorities. This proclamation must explain the military ordinances in such a manner that the people will clearly understand their meaning. The day shall also be announced on which the elders will communicate to the local authorities the names of the individuals whom they desire to designate. It is the duty of these authorities to make it impossible for their representatives or for the elders to accept gifts under any pretext; a violation of this provision will be severely punished.

"4. As soon as the number of recruits obtained under the above method is sufficient for the formation of a "shao" (half battalion), each recruit will receive 100 cash per day for his maintenance; they will be quartered in a designated locality until the battalion is complete, whereupon the regular military service will commence. From this time on their daily pay will be 150 cash.

"5. As soon as the battalion is associated with another, every sub-officer will receive a monthly salary of five taels and every private 4.5 taels in addition to the subsistence money above mentioned. The general will deliver to the family or the nearest relative of each soldier a certificate intended to be used as follows: Beginning with the fourth month of the soldier's enlistment, a deduction is made of 1.5 taels from the pay of a sub-officer, and 1.00 tael from that of a private. These deductions are deposited with the commissariat (intendantur) and forwarded every six months through an authorized agent to the magistrate of the district of which the soldier in question is a native, who, in the agent's presence, delivers the money to the family or the nearest relative of the soldier, on presentation of the mentioned certificate, on a stated day designated to the public by a joint notice of the agent and the magistrate. The amount and the date of payment will in every case be entered on the certificate in the presence of the owner. In case a certificate is lost, the local authorities must be notified one or two days before the payment is due when a new one will be issued and the first one cancelled. Should the authorities or the agent have committed some peculation in the distribution of the funds, the family or relative of the soldier defrauded by said peculation will notify him of the fact by letter and the soldier will show this letter to his battalion commander. The guilty party or parties will then be called to a strict account.

"6. It is expected that every soldier who has been enrolled in the service shall devote his entire time and attention to the performance of his military duties. This he can do only when he is relieved of all family cares. The families or nearest relatives must therefore be protected in every way by the local authorities against the slanders of evil minded parties in their town, and in case of litigation, they are entitled to the privileges usually granted to "literats" of the first grade, so that they possess the right of presenting their side of the case to the court of justice through an advocate or counsel on the day of the trial. This privilege is denied to dismissed soldiers, who will be treated in every respect as ordinary people.

"7. He who has held military rank three months and demonstrated his worthiness, will be exempted from the tax which is usually laid upon the population of Pechili by the government. If, however, he is proved to have used his position as soldier to assist others in litigious matters, he has rendered himself liable to serious punishment.

"8. At the end of every month, each battalion commander will report to the colonel in command how many men have been furloughed, how many have absented themselves without leave, and how many have been dismissed during the month. The general will from time to time furnish to the district magistrate the names of all dismissed soldiers, in order to prevent their being enrolled a second time.

"9. If a soldier deserts from his battalion and returns to his home, the prefect of the respective district will be duly notified, and the latter will cause both the soldier and his relatives to be imprisoned. Should the elders protect him or refuse to surrender him, they shall be severely punished. In case the deserter's whereabouts are not discovered after a month's search, the local mandarin will institute legal proceedings against the relatives, according to circumstances.

"10. If the local mandarin shows negligence in his efforts to arrest a deserter, he will be punished according to law.

"11. Whenever a soldier is advanced to the rank of officer, an official notification of the fact must be sent to the local mandarin.

"12. The following qualifications are required of a recruit to permit his enlistment:

"(*a*) He must not be under twenty nor over twenty-five years of age.

"(*b*) He must be strong enough to lift with both hands a weight of 100 pounds up to a level with his breast.

"(*c*) His height must not be less than four feet eight inches.

"(*d*) He must be able to march twenty li in one hour.

"(*e*) He must bear an honorable character and never have been punished by incarceration.

"(*f*) He must be free from physical defects."

Thus far, the results obtained by Yuan-shi-kai with this system of raising troops in the Province of Pechili have not been absolutely satisfactory; the greater portion of his recruits must rather be drawn, as heretofore, from neighboring provinces, chief among which are Honan, Shantung and Anhui. The conscripts, for whose good conduct, according to Yuan-shi-kai's proclamation, the town elders are held responsible, are to serve three years with the colors, three years in the Reserve, and the same length of time in the Militia. The Reserve and Militia men are called upon every year to undergo a month's training, but the Russo-Japanese War has thus far prevented the carrying out of this regulation.

With regard to the recruiting of officers, which likewise has been the object of Yuan-shi-kai's deepest attention, the old method has of late undergone important modifications which, when gradually accomplished, will produce good results and influence in the best manner the army's efficiency.

Heretofore and as late as the year 1900, the supply of line officers was extremely defective. "Commissions" were preferably conferred upon Chi-yen Banner men who had served a number of years in the army, whose record was reasonably clean and who had saved a sum of money sufficient to obtain a "position."

A knowledge of reading and writing was not considered essential with them; they were required simply to give evidence of a certain dexterity in practical military exercises dating back to ancient times. The tests formerly applied in Peking or in the provincial capitals consisted in:

1st. Drawing the bow.

2d. Saber exercise without adversary.
3d. Lifting and throwing stones.
4th. Shooting with the bow on horseback.
5th. Shooting with the bow on foot.

In all this, the sole requisites were physical strength acquired by exercise, and some degree of manual dexterity; the applicant was never called upon to discuss theoretical questions.

After the examination was passed and the necessary sum of money had reached the proper hands, the candidate became an officer, but in order to obtain further promotion, he had to submit to additional tests or distinguish himself on the battlefield.

Under the last published edicts of the Emperor and the new regulations of the War Office, which pursues the work of reorganization with great zeal and vigorous Japanese assistance, the qualifications demanded of the applicant for an officer's commission are altogether different. The candidate must come from a good family, be physically well proportioned, and possess the necessary strength for strenuous exertion. His education must have developed his self command so that he shall be able to endure the privations inseparable from war, and become a pattern of excellency to his subordinates.

Former service in the ranks of the army is not indispensable, but evidence must be given of the above qualifications before the candidate is permitted to enter a military school. In the military schools, of which there are at present one in each of the fifteen provinces, with an aggregate of 3,344 pupils, a scientific education is the main object in view, but practical training is by no means neglected; they correspond in many respects to our Cadet Corps, without giving, however, the same satisfactory results. The candidate officer enters the school about his twentieth year, and nothing more is required of him at first than a moderate ability in reading and writing. Theoretical and practical instruction are carried on simultaneously. The first year a beginning is made with the simplest principles of tactics and firing, with demonstra-

tions of modern weapons accompanied by practical firing exercises with the infantry rifle. The student is, furthermore, initiated in the first principles of field sketching which, in the higher classes, develops into land surveying. He also receives instruction in reading, writing and arithmetic.

The regulations specially prescribe that students shall acquire a comprehensive knowledge of history and geography, not only of their own country, but likewise of those European states which take a prominent part in the affairs of the world by virtue of their accomplishments in war, politics, commerce and industry. The study of foreign languages has, very strangely, been left out of the curriculum, and we must assume that the individual student is expected to possess enough ambition and energy to study at least one foreign idiom. Finally the practical exercises consist in daily drills with and without arms, in field service, athletics, gymnastics and target shooting. All these are based upon the Japanese drill regulations which, as is well known, have been largely borrowed from the German. At the end of each year the student passes a certain examination, and if successful is promoted to a higher class. If he has distinguished himself by very superior attainments in knowledge, he receives in addition a money prize which, however, does not exceed eight or ten taels.

After the student has passed through all the classes and stood with success the final examination, he has acquired a claim to an officer's commission, becomes an officer, and after a three months' furlough, takes his place at the front.

This system has been in operation but a short time, and hopes are entertained that it will gradually expand and take root so as eventually to produce a good supply of officers.

Only three provinces, namely, Kiangsi, Kansu and Honan, are still unprovided with military schools. Kiangsi has for a long time been the seat of insurrections, while Kansu is poor and very remote. It is harder to understand why a prosperous province like Honan, which furnishes excellent fighting material, should be so backward. This may, perhaps, be explained by the fact that all the recent governors

of that province have been reactionary men who did not believe in innovations.

Outside of China proper there is another military school in Chinese Turkestan.

The further instruction of officers graduated from the military schools will be entrusted to a Military Academy which is to be established in Peking. It will be modelled after the academy founded in 1902 at Pao-ting-fu by Yuan-shi-kai, which makes it probable that the new institution, like its older sister, will be managed chiefly by Japanese. By the side of this academy, it has been decided to open in the capital a special school of strategy and tactics, in which Japanese instructors also will inaugurate their courses in May of the present year.

Besides the Military Academy and the School of Strategy, the Army Reorganization Board contemplate the foundation in Peking of another military school for the exclusive accommodation of the nobility. The Empress Regent has contributed to that object, out of her privy purse, the sum of 50,000 taels, and the school will be patterned upon the School for Nobles at Tokio. The immediate provisions have been adopted, and at the present time await the scrutiny of the vice-president of the War Office, Hsu-chi-chang. After these three institutions have been organized on Japanese lines and within a moderate space of time, there is talk among Chinese military circles, of establishing further, and before long, Central and District Preparatory Military Schools, Schools for Artillery and Engineers, and a Military Marine School, such as exist already in Japan.

We cannot drop the subject of the recruiting of officers, the present status of military education and training in China, and above all, that of the instruction of the rank and file, without calling attention to the active part taken in that work, under great difficulties, by German officers, not only in former times but still at present, though in very limited degree.

The first German instructors were appointed about the "middle seventies" of the past century; they increased rap-

idly in numbers, and their activity extended before long to North, South and West China.

The war in Tonquin, with its disastrous results, put an end to the efforts of the southern provinces to reform their military methods; a special treaty with France prohibited the employment of other than French instructors. Later on, Russia secured for herself the same privilege in the Province of Pechili.

The largest number of German instructing officers were at work in the nineties, and we cannot emphasize too much the fact that it was with their coöperation that the foundations for an efficient army were laid. They went so far in that direction that a corps of troops was organized at Woosung in which nearly all the officers were German.

Since last year the German military instructor has altogether disappeared in the north of China, and everywhere else in the Empire he carries on a hopeless struggle against the serried ranks of Japanese competitors. To-day Germans are employed in three military schools only, three of them in Woochang, one in Nanking and two (one of them an Austrian) in Tsinan-fu; a few are still on duty in the arsenals and powder mills. Most of them have occupied their places several years; for instance Messrs. Hoffmann, Fuchs and Töpfer do duty in Wuchang since 1895, and Mr. Von Tettenbom has taught the military art in Nanking almost as long. Among recent appointees are Messrs L. Bauer and Baron von Seckendorf, both former Prussian officers who now reside permanently in Tsinan fu the capital of Shantung.

The services of these instructors are secured by contracts with the provincial administrations, which run usually for three years. At the end of the period the relation ceases unless the contract is renewed. As to salaries, they have reached in Wuchang and Nanking the sum of 1000 marks ($238.00) per month; in the north, however, and in Tsinan-fu, they have come down to 700 marks. In addition to the money, the instructor receives certain allowances, such as free quarters and in some places servants and riding horses.

This teaching personnel is almost exclusively attached to

military schools, not to camps, and the course of instruction includes practical duties and the military sciences. The instructor has to begin with the simplest subjects, for there is usually a total lack of preliminary knowledge and a radical correction of views is indispensable. It is often the case that serious obstacles are placed in the pupil's way by their officers themselves. The worst happens when high officials who never have filled military positions in their lives think themselves called upon to issue orders and regulations contrary to all the principles of the art of war and of military discipline. It frequently happens also that the highest civil functionaries, such as supreme judges, "saltztaotai," and others hold parades and reviews, or even, in addition to their legitimate office, are made commanders in chief of military forces.

Under a decree of the central government, the course of studies at a military school extends over a term of four years, but this limit is not strictly enforced, for there are pupils who attend a school eight or nine years, while others, through influence, are permitted to enter shortly before the discharge of their class. No age limit has been prescribed for entrance in the school, and it happens that boys of sixteen and men of forty-six receive instruction together.

While the reorganization has improved the method of teaching very materially, it is still the fact, that after completion of the course of studies, only a small proportion, ten to twelve per cent. of the graduates, may count upon an officer's position or assignment in the provincial army. This detracts considerably from the importance of the military schools, and the labor and efforts of the teachers have been thrown away, if the majority of the students designed and trained for the military calling cannot, after completing their studies, be provided with places in the army. But this defect may also be corrected when the reformation of the military schools, which we have described above, shall have been fully carried out and become permanent.

From the theoretical standpoint, the method of instruction is no easy work; for instance, the subjects to be taught must at first be translated word for word into Chinese and

then be written out on the blackboard, from which the pupils transfer them to their copy books and then commit them to memory. Another difficulty renders teaching laborious: Chinese text books are either wanting or insufficient in quantity, so that every word of the lesson has to be written on the blackboard. This, of course, consumes a good deal of time and makes progress very slow.

The results of practical instruction are more satisfactory and obtained with less difficulty than is the case with the classroom course. An interesting report of an inspection lately made in the military school of Tsinan-fu, which has been placed at our disposal, gives evidence of this fact and demonstrates at the same time the harmony which prevails in the training methods of the schools and those of the camps, of which we shall treat in detail later on. The report states:

"The inspections formerly held once a month have been replaced by a more reasonable institution, that of quarterly inspection. The exercises lasted three days, and began with a display of practical work, drill, athletics, passing on to field service, under the scrutiny of the director of the school. Then came infantry drill by three companies, each one hundred men strong, formed in column of companies. The impression produced by these soldiers, dressed in comfortable and substantial uniforms, was anything but unfavorable, specially so with regard to the first company, whose Chinese commander made an excellent impression.

"Upon the appearance of Chang, the director of the school, Military Instructor Baron von Seckendorff, acting as battalion commander, gave the proper commands and the men executed the movements of carry and present arms. The director paced up and down the front of the line, after which the first and third companies moved to the left (their right) in order to make room for the evolutions of the second. The second company practiced handling the rifle and aiming at the target; then went through various movements in company column, in step and out of step, finally closed with the "present arms," customary on such occasions in this country. It was followed by the third company (recruits) with the school of the soldier standing and marching, and movements in column of sections, the latter not absolutely correct.

"The crowning display was the work of the first company, which began with the manual of arms, followed by loading and firing; the latter was performed both in the standing and the knee position.

"After these exercises the companies marched toward the eastern part of the drill ground and prepared to pass in review. They failed, it is true, to show the vigor and steadiness which we demand of our men, but on the whole they produced an extremely favorable impression.

"The infantry exercises were followed by a drill with mountain guns drawn by horses, limbering and unlimbering, battery evolutions, finally firing at a target. After the mountain battery had demonstrated its capacities, came a short drill with a battery of old German field guns, without horses. This did not amount to very much, for the heavy pieces had to be moved by main force, and on that account the movements were omitted.

"The inspection closed with a series of gymnastic performances without apparatus, after the Japanese method; the noisy counting of the men and the rather unmilitary attitudes and forced motions gave the display a somewhat theatrical appearance and it failed to meet with the same applause as the other exercises."

On the whole, we can truly say that the Military School at Tsinan fu is in a fair way to develop a useful body of troops for the Chinese army.

After this digression, if we turn again to the subject of reforms in the corps of officers, we discover that said reforms not only involve higher scientific requirements and a sounder military training than heretofore, but their aim is to thoroughly regulate the system of seniority according to modern views. In this connection we quote an official report of the War Office to the Emperor, concerning the officers of the new military organizations:

"We, ministers of the state, humbly submit to Your Majesty the following suggestions, relative to the ignorance that prevails in the corps of officers, and the difficulty of increasing the warlike spirit and improving the military abilities of that class.

"In obedience to the express and repeated commands of Your Majesty, that we should make readiness for war the sole object of our attention, we, ministers of the state, have elab-

orated an offensive and defensive scheme for the army; we have framed regulations for military schools, and made arrangements for sending military students to foreign countries; all these measures have met with the highest approbation and have received legal sanction in all the provinces. It is now our duty to devote our entire attention to other pending questions and solve them gradually in a satisfactory manner.

"If we intend to elevate the army, we must in the first place render the soldier's calling popular and attractive; to make it so, it is essential to radically improve the condition of the officers. We therefore take the liberty to quote the following edict of His Majesty, of blessed memory, your august ancestor and great Emperor, Kao-tsung Shun-huang-ti, dated in the fifty-first year of the administrative period styled "perpetual highness." (Chien-lung 1736–1796):

"'The state appoints officers in order to be prepared for offensive operations, and armed against all attacks. An officer's responsibility is not in the slightest degree smaller than that of a civil functionary. Towards the end of the Ming Dynasty, civil officials had monopolized all the business of the state; as a natural result, preparation for war was neglected, the frontiers of the Empire were weakened and the government lost all power. The fact that military functions were entrusted to civil functionaries was the sole cause of this deplorable condition, and must inevitably have brought about the fall of the dynasty.'

"These are truly impressive words of the deceased monarch, and they show clearly to the whole world where are to be found the supports of a throne. If the reigning family cares for its servants under tents and in encampments, and rewards military merit, talents will surely rise to the surface, brave men will come to the front. To all men alike, the desire to reach the highest places is an honorable ambition; rewards must be measured by merit. Great results have occasionally followed moderate encouragement. Among foreigners both in the east and in the west the soldier is highly considered; this renders the military profession universally popular. The officer is greatly respected, but the rank and file are also considered an estimable class of the population. The nation's self-respect grows from day to day, and the land enjoys great prosperity.

"We ministers of the state know full well the meritorious efforts of our august Imperial family to elevate the army from times long past to the present. About the beginning of the Dynasty, the brave members of the eight banners kept watch at the Imperial court, while troops of the green standard guarded the outside provinces; their organization was fixed and became a standard for other troops. The detachments patrolling the highways suppressed brigandage,

and every man, from the common soldier to the highest commander, performed more glorious deeds than we can enumerate. But they were all raw soldiers without culture, children of their epoch, when personal bravery was a sufficient claim to the highest places. Under present conditions, such men can no longer serve as officers; they must be satisfied with their modest rank or put up with minor employments; in fact, where there is no prospect of advancement for them they should preferably be discharged altogether. Not only the highest dignities of general or lieutenant general should be universally honored as heretofore; the lower grades just as well, down to that of lieutenant, deserve full consideration and respect; if, however, they lose their own self-respect, the world will look upon them with contempt.

"Nothing is worse than ignorance and lack of culture in the case of officers To bring about a gradual improvement in this respect is our self evident duty.

"Of late years, in order to stimulate the people and secure proper support for the throne, Your Majesty has in many edicts laid great stress on the importance of the study of military sciences, so as to excite a lively interest in the subject throughout the whole Empire. Since the opening of our military schools and the return of military students to their homes a vigorous competition has set in. Gray haired generals have become absorbed in their studies, former civil officials have begun all over again in the army, and everyone is industriously pursuing his military education.

"From among the best scholars formed under the new system and commissioned as officers, the professors and instructors for the military schools will be appointed. With the advancement of our army, a new spirit will arise and the profession of arms will flourish. The rude, ignorant man of old times will make way, and be replaced by cultured and zealous officers. The difficult nature of the studies, and promotion by discriminative selection, are a guarantee that mediocre men will not rise above the inferior grades, that of lieutenant at best, a position of no great importance. He who accomplishes nothing will bring about his own fall.

"Tung-Chung-Su (celebrated man of letters, and minister in the second century before Christ) says somewhere: 'If your lute is out of tune, tighten the strings. draw the bow vigorously.' We, ministers of the state, while carefully studying the various army organizations of the several dynasties, have met with such radical differences between them, and so great a variety of titles and offices, that we cannot re-

member the greater part of them. Accordingly, we deem it unwise to retain the old designations and consider it absolutely necessary in these modern days to introduce new names for the various service grades, so that both the eye and the ear may realize that we are dealing with something entirely new, something drawing general attention. In so doing, we naturally must not lose sight of the historical evolution of institutions.

"Your Majesty has, within the past few years, made certain promotions out of the regular line, and in several cases, as a matter of special distinction, conferred Manchurian offices upon Chinese functionaries. This practice breaks with traditional usage, and may be considered a concession to modern conditions and necessities. Surely this is the most efficient way to exercise a quiet supervision over officials. At any rate no distinctions exist any longer between the various subjects of Your Majesty, and in the course of time every vestige of difference between Manchu and Chinese shall have vanished. The impartial conferring of positions respected by every one, will keep an odious sycophancy within bounds, and open the way for a system of honorable competition.

"After mature deliberation, we, ministers of the state, have decided upon the following new arrangement which corresponds both to the organization of the eight banner corps and to our foreign models.

"The officers of the new army are divided in three classes and nine grades, viz:

"First class: Shang-teng-chün-kuan. (Generals.)

"1. General, Cheng-tu-tung, formerly, Ti-tu. Lower grade of the first rank.

"2. Lieutenant General, Fu-tu-tung, formerly Tsung-ping. Upper grade of the second rank.

"3. Major General, Hsieh-tu-tung, formerly Fu-Chiang. Lower grade of the second rank.

"Second class: Chung teng-chün-kuan. (Field officers.)

"4. Colonel, Cheng-tsian-ling, formerly Ts'an-chiang. Upper grade of the third rank.

"5. Lieutenant Colonel, Fu-ts'an-ling, formerly Yu-chi. Lower grade of the third rank.

"6. Major, Hsieh-ts'an-ling, formerly Tu-sse. Upper grade of the fourth rank.

"Third class: Hsia-teng-chün-kuan. (Subaltern officers.)

"7. Captain, Cheng-chun-hsiao, formerly Shou-pei. Upper grade of the fifth rank.

"8. First Lieutenant, Fu-chün-hsiao, formerly Ch'ien-tsung. Upper grade of the sixth rank.

"9. Second Lieutenant Hsieh-chün-hsiao, formerly Pa-tsung. Upper grade of the seventh rank.

"All officers of the new organization, educated in the military schools or abroad, or serving as instructors are placed in the ninth service grade of the third class, and when otherwise employed receive the civil rank corresponding to their grade.

"As soon as our propositions have received the approbation of Your Majesty, we shall carefully elaborate the necessary provisions for their execution and submit them to the supreme authority of the Crown for examination."

In the meanwhile, and until the new organization is completed the troops of the green standard still remaining in the service are authorized to retain their ancient titles.

Before we take up the description of the Peiyang and Hupei armies, spoken of in the fore part of this essay, it will be advisable, in order to clear up certain points, to describe briefly the general arrangements of the Chinese army.

The several troops of both armies are quartered in so-called "camps," which form quadrangular aggregations surrounded by mud walls. As a rule, a camp of this kind accommodates a battalion of infantry of 500 men, a squadron of cavalry of 200 to 250 men, or a division of artillery of 300 to 400 men; there are few exceptions to this rule. The officers live together with the men; their families must be provided with lodgings outside, for women and girls are not allowed to reside in the camps. Contrasting with the general uncleanliness so prevalent in China, the military camps are kept clean and tidy, and on festive occasions when gaily decorated with numerous flags, of which the Chinese are lavish, they produce a very favorable impression.

The sanitary branch of the Chinese army is still in its infancy; surgeons trained in European schools are found only in the first division, in Yungping-fu and in Paoting-fu where a large military hospital has been constructed. A

school for the education of surgeons has been founded in Tientsin and is at present conducted by French teachers.

There is in the Chinese army no such thing as a General Staff in our sense of the term, yet steps in that direction have been taken by General Yuan-shi-kai, and the military academy which will be established in Peking, is intended to serve as a kind of preparatory training school for the General Staff.

Referring now to the Peiyang army commanded by General Yuan-shi-kai, the latter, on being transferred from Shantung to his new post, brought with him a portion of his troops, "the so-called Wu-wei-yo-dsün," meaning "the warlike army which defends the right wing."

The strength of this army is as follows:

Five battalions of infantry, 1,000 men each	5,000 men
Three squadrons of cavalry	1,000 men
Three sections of artillery with twenty-four guns	1,100 men
One battalion of pioneers	400 men
	7,500 men

The infantry are stationed in Peking, part of the cavalry there also and part in Tientsin as body guard. The artillery and pioneers are located in Hsiautshan, 30 kms. south of Tientsin. In addition, Yuan-shi-kai disposes of an unmounted body guard of 500 men, taken likewise from that command. The foot troops are armed with Mannlicher rifles, the cavalry with Mannlicher carbines, the artillery with old style Krupp guns.

In former times, before the late troubles, this army was taught and exercised in Hsiautshan by German instructors exclusively, and counted among the best troops then in the Chinese service. During the troubles of 1900 they suppressed the Boxer insurrection in Shantung where Yuan-shi-kai had been transferred from Hsiautshan.

Yuan-shi-kai has created the following bodies of new troops:

Three divisions, "Tchang-bei-dsün." This expression literally means "the ever ready army," and may be translated as the "standing army," for the men, after serving

three years with the colors, are transferred to the Reserve, and three years later become members of the Landwehr. Each division contains:

Twelve battalions of infantry, 500 men to the battalion, (four regiments of three battalions each, two regiments forming a brigade)	6,000 men
One regiment of cavalry of four squadrons	700 men
One regiment of artillery in three sections, of which two sections of field artillery, thirty-two guns and one section of mountain artillery, sixteen guns	1,100 men
One battalion of pioneers	500 men
One train battalion	500 men
One sanitary detachment	100 men
About	10,000 men

with thirty-two field and sixteen mountain guns. The section of artillery is made up of four batteries of four guns each.

These divisions are stationed as follows: The first division at Yungping-fu near Shan-haikuan; the second division at Matshang on the Imperial Canal, 70 kms. south of Tientsin; the third division at Pao-ting-fu.

The first division is armed with the Japanese Arisaka carbine, 7.5 cm. field and mountain guns. The second division carries carbines 88, of Chinese manufacture. The third division has likewise carbines 88, Krupp field and mountain guns.

Foreign instructors have not been employed with these troops. Their training is effected on Japanese and German lines, and the tactical composition of the division is patterned very closely on the Japanese system. The Japanese officers engaged by Yuan-shi-kai either serve personally as military advisers or occupy teachers' positions in the Paoting fu military school.

The organization of a fourth division has been temporarily suspended on grounds of economy.

The Peiyang army in its entirety comprises also the troops which were organized under Yuan-shi-kai's predecessors, particularly Li-hung-chang, and which he found in the Province of Pechili when he assumed authority therein, as

well as those which were placed at his disposal from other provinces.

To the first belongs the old garrison of Port Arthur, now called "Wu wei tso-dsün," the "warlike army that defends the left wing." They are commanded by General Ma, and their proper station is Tung tshou near Peking, but since the breaking out of the Russo-Japanese War, they are on duty in the region of Tshauyang, to maintain the neutrality of China.

The strength of this army is nearly as follows:

Sixteen battalions of infantry	7,500 men
Five squadrons of cavalry	900 men
Three sections of artillery	1,100 men
	9,500 men

There are still 2,000 additional men at Tung tshou. Armament: Carbines 88, some of them constructed on the seventy-one model; the artillery work some fifty Krupp guns of various construction.

General Ma has the reputation of being the ablest general of China; his troops have fought against foreigners at Tientsin and in the Shansi Passes, and they may be said to have acquitted themselves in a very creditable manner.

The Huai army still remains to be considered. The Huai is a river in the Province of Anhui, Li-hung-chang's native country. This army is used at present exclusively for police purposes and the guarding of the highways; it is variously armed and militarily worthless; along with other similar aggregations, it makes up a force of about 7,000 men.

The political situation and more especially the protection of the Imperial capital, Peking, have naturally made it necessary to concentrate there a considerable body of troops, and additional assistance has been gradually drawn from other less exposed provinces. These supplementary troops are at present under the orders of the Governor-General of Pechili, but receive their pay from their native province.

Thus, in Peking, we meet with the Honan troops designated "Idsün," "the warlike army," with the following strength:

Eight battalions of infantry	4,000 men
One squadron of cavalry	210 men
One section of artillery	400 men
	4,610 men

Armament: Mannlicher carbines. The artillery is supposed to be outfitted with Krupp field guns; further information is wanting. At Tung-tshou, near Peking, are stationed some Hupei troops, two battalions of infantry, war strength (2,000 men) armed with rifle 88 of Chinese make. These troops produce a very good impression.

In Pao-ting-fu are located eight battalions (2,000 men) of Shantung infantry armed with rifles of the $\frac{71}{84}$ pattern.

South of Tientsin, in the military camp of Hsiautshan, are the troops from Kiang-su, the "Tse-tshiang-dsün," the "independently brave army." German instructors have taken part in their training, and their military bearing indicates that the old lessons are not yet entirely forgotten. This corps numbers:

Nine companies of infantry (war strength)	2,250 men
One mounted pony company	500 men
	2,750 men

The military camp at Hsiautshan is commanded by General Yu-pei-tien. A number of German officers belonging to the East Asiatic Brigade of Occupation having been invited by him to inspect the troops under his command, recently visited his camp, and described their impressions in the following interesting report, which has been placed at our disposal:

"The village of Hsiautshan has many crooked streets crossed by numerous ditches and canals well adapted to the defense of the place. The four camps which constitute the aggregate military establishment are rectangular in shape and surrounded by walls nearly two meters high. Each angle is surmounted by a small sentry box for the sentinels who patrol the walls. These walls are built of mud mixed with Kauliang straw; no stones are used in their construction except for the arches of the gates, of which there is one in the middle of each side.

"As we approached the camp, the cannons fired a salute,

the sentries on the walls remained standing by their boxes and presented arms. The guard was drawn up at the entrance gate under the command of an officer, and paid military honors. Soon after our introduction in the camp, General Yu-pai-tien gave a signal for the inspection to begin. The latter embraced: 1st. Drilling of a company of infantry; 2d. Drilling a mounted company; 3d. Examining the interior arrangement of the camp; 4th. Witnessing the instruction of a school for reënlisted men.

"The company to be inspected was formed in twenty-four squads and drawn up in line. The formation, alignment and bearing of the men, more particularly their standing perfectly still, could not have been excelled anywhere. Pacing up and down the line was immediately succeeded by several exercises, among which the school of the soldier, manual of arms, loading and firing, facings, etc., deserve the chief mention. The manual of arms specially was characterized by great vigor of execution; no one was out of time, nobody stirred, all eyes were concentrated on the commanding officer. The other exercises which followed the manual were likewise thoroughly well executed and gave evidence of great attention to details in the training of the individual soldier. The school of the soldier was followed by that of the company.

"The passage of the company from formation in line to one suitable for marching in review was executed by a maneuver entirely new to us, namely, turning squads into company column. As far as direction and carrying of the rifle were concerned, the march was perfect, but the swing forward, the firm step that we are familiar with, seemed to suffer from a habit of raising the leg too high. The subsequent exercises were performed at a walk; they comprised the leading out of various columns, changes of direction and deployments. The step never wavered; it was vigorous and abrupt. It was characterized after each change of formation by a peculiar stamping of the men in the front rank.

"The marching evolutions terminated with a turn of squads from company column into line and the command, *halt, load kneeling.* The execution was perfect, save that the men in the middle squad, after the turn, knelt a little too close together.

"The manner of changing formations appeared to have been borrowed from other than German drill regulations; for instance, we noticed differences in passing from line into

column of sections which was not effected by turning the sections as it is done by us.

"Next came the evolutions of sharpshooters; skirmishing in various directions; changes of front of the lines of skirmishers, opening fire, in which firing by file was clearly perceptible, then the charge. Everything was done with order and composure, and created a very good general impression. The German drill regulations had been pretty closely followed in this part of the maneuvers.

"Then followed the exercises of the mounted Pony Company armed with lances. We must state in advance that here also the movements were executed with a degree of precision which could hardly be excelled. The external appearance of the company, the sorting out of the ponies according to color, the streamers on the lances, etc., were very pleasing to the eye. Here also the German drill regulations have been made generally the basis of the system.

"The squadron was repeatedly formed in half column, passing therefrom into column of squads, after which the command would be given, 'Squadron, by squad, left about, turn,' which would bring them into line, then 'charge, lower lances, march.' All these movements were governed by signal calls blown by trumpeters riding immediately behind the commanding officer.

"We were also shown some exercises with the lance Everything was executed with precision and composure; the impression was produced that the cavalry leader, as well as the infantry commander, had his men well in hand.

"Unfortunately we saw nothing of the artillery, which had been sent out to the district of Pao-ting-fu for target practice. We were able, however, from a lecture delivered lately in Paris by the French Captain Ollone, to add, with reference to the development of this arm, that a great deal of attention is devoted to it. Mr. Ollone relates how he witnessed a drill with fifty-seven mm. quick firing guns, which were drawn by horses as well as by cannoneers. Each piece was served by four men, and in the course of the drill it was assumed that the enemy's fire gradually disabled three of the men, when the sole survivor would be called upon to continue alone the service of the piece. It appears that the gunners displayed extraordinary dexterity.

"The drills in Hsiautshan were followed by an inspection of the camp. All apartments were scrupulously clean; the men's beds (kangs) covered with neat blankets, the head cushions properly rolled up. Of course preparations had

been made for the inspection, still there is no doubt that the men were impressed with the necessity of cleanliness in the soldier's life, this in a country where Europeans are so often shocked by the lack of it. This should be put to their credit. The living rooms were not so satisfactory. Here, likewise, everything was in good order, but a glance at the few rifles, side arms and belts and their condition showed that these things did not correspond to modern requirements.

"In conclusion, we witnessed a session of the school, which was attended by the best men of the companies. They were being educated and trained to become sub-officers and officers. The instruction was given in a clean school room. Each pupil had his books in front of him, with pencils, ink bottles and brushes neatly stuck in little cases. They were taught the English language, how to read and write in Chinese, arithmetic and geography. They were all thoroughly bright faces that looked at us. Some of us asked questions, many of which were quite correctly answered.

"Here a Chinese officer displayed a map of the surroundings of Hsiautshan and of the camps, which had been drawn with the help of the lineal perspective rule (Kippregel). This ended the official part of the inspection, of which we cannot speak without full acknowledgment of its merits."

After this brief digression which seemed necessary for a proper appreciation of the Kiang-su troops, and a comparative exposition of the work done in the military schools and in the camps, we will conclude the enumeration of the Pei-yang army with a mention of the Manchu troops in Pao-ting-fu trained in European methods. At present they number 4,000 men and are being developed into a division according to Yuan-shi-kai's proposed scheme. They are armed with carbines of Chinese make, model m. 88, the artillery with Krupp mountain guns.

Consolidating all the preceding data relative to troops directly controlled at the present time by Governor-General Yuan-shi-kai in the Province of Pechili, we obtain the following summary:

The Wu-wei-yo-dsün army	7,500 men
The Tshang-bei-dsün army	28,700 men
The Wu-wei-tso-dsün army (including the garrison of Tangtshon)	11,500 men
Contributed by other provinces	11,360 men
Manchu troops in Pao-ting-fu	4,000 men
	63,060 men

The progress made by the Pei-yang army under Yuan-shi-kai's new regime was demonstrated at the grand maneuvers held last year for the first time on the European plan in the district of Ho-kien-fu. The troops, aggregating some 13,100 men with sixty-four guns, were, as is the custom in other large armies, divided in two parts and the exercises based on general and special problems, for the solution of which the respective leaders were expected to regulate the necessary dispositions.* The favorable results obtained on this occasion were presumably induced by the understanding that the maneuvers will be repeated this year. The orders are already issued and promulgated to the effect that by the middle of May some 30,000 men shall be concentrated in the plain of Pao-ting-fu. The Emperor has already agreed to permit all foreign officers living in China to witness the exercises; it is also the intention of the Emperor and of the Empress mother to attend the maneuvers in person. As a preparation for these maneuvers the troops, maintained in the neighborhood of the Imperial Palace in Peking and of the Eho Park, were, early in April, to have been assembled for a little practical training in the South Hunting Park, twenty leagues south of Peking.

As we stated in the beginning of this essay, besides the Pei-yang army, the Hupei army constitutes the modern portion of the Chinese military force. This army is distributed over the Province of Hupei, which, with the Province of Hunan, forms an administrative district named Liang-hu. The capital is Wu-tshang on the Yang-tse, wherein resides the viceroy of both provinces, who is, at the same time, governor of the Province of Hupei, while Hunan has also a governor of its own.

For nearly seventeen years and with few interruptions,

*See the following article for a description of these maneuvers.

Hupei has been administered by one and the same viceroy, who may be counted among the ablest statesmen of China. This circumstance, as well as the great military knowledge of Tshang tshi-tung, and the additional fact that the province has not suffered great disturbances, rendered possible the creation of an army under the most favorable and peaceful conditions, an army which is scarcely inferior in value to that organized in Pechili under the auspices of Yuan-shi-kai.

In the way of numerical strength, Tshang tshi-tung's troops do not indeed bear comparison with those of the Pei-yang army, for the Hupei army, up to the present, includes only eight companies of war strength and two squadrons. In comparison with the size of the province (185,000 sq. kms.) and a population of thirty millions, the military levy is rather small. But Tshang-tshi-tung has been careful to avoid the mistake, often committed formerly in other provinces, of calling into existence numerous military aggregations for which a sufficient training personnel of capable officers could not be obtained. So far the supply of officers has always been the weak spot of the Chinese military system, as we have exhaustively demonstrated in this essay. And before attempting anything more extensive in this direction, Tshang-tshi-tung decided to content himself with just that number of troops for which he could provide suitable training with the personal facilities at his disposal.

It is surprising to see such a small force of cavalry in the Hupei army with a total deficiency of artillery. These defects are explained by the fact that the mountainous character of the province and the wretched condition of the roads, render the employment of artillery very difficult, besides which, the tea and rice fields are impassable to anything but infantry. Furthermore the ponies of Hupei are smaller than those from Mongolia, and from our standpoint make very poor cavalry horses.

With regard to the recruiting of the Hupei army, the former practice of drawing the men exclusively from other provinces has been stopped and only natives of Hupei, or rather of Honan, are now enlisted, for the population of that province has the reputation of furnishing excellent fighting

material. There is here no system of conscription, as exists in the Province of Pechili, to keep up the Peiyang army. The requirements for the acceptance of a recruit are: Age from twenty to twenty-five years, three years of school attendance, evidence of good character furnished by the local authorities and their assumption of responsibility for the applicant.

The recruit, if qualified, engages to serve four years with the colors, and the same length of time in the reserve. The pay of a private soldier has heretofore been 4.8 taels per month. The salary is paid every fortnight in advance and without any deduction whatever. This is a great improvement over the old custom, when the soldier supplied his own food and clothing and the money value thereof was deducted from his pay by the commanding officer, a practice which naturally led to gross abuses. In the Peiyang army the soldier receives but 4.2 taels per month, yet 1.1 tael thereof is stopped against him for his maintenance.

We have heretofore alluded but briefly and in general terms to the armament of the Chinese army, and have avoided entering into details. The reason for this lies in the fact that the central government in Peking has very recently decreed that the armament for the entire army shall be unified. Rifles of seven mm. calibre and field and mountain guns of 7.5 cms. have been selected for introduction. A beginning has already been made with the artillery; after several single purchases and repeated firing tests, the central government has placed with Krupp in Essen, an order for thirty-six field and thirty-six mountain self-recoiling guns of 7.5 calibre, with their outfit of ammunition and other accessories. The guns are provided with all the modern fittings, and stand on a par with the very best in use. The preference shown for the Krupp system is remarkable, considering that Japan had made great efforts to secure that order, and in spite of the war, at the very time of the closing of the contract with Krupp, had herself just filled a former contract for field and mountain guns of 7.5 cms. calibre which, however, were not mounted on self-recoiling carriages.

The central government seems accordingly to have taken the important step of gradually rearming all the artillery with

guns of the self-recoiling style. Possibly the new scheme, like so many of its predecessors, may break down with the first attempt. At any rate it is a significant indication of the trend towards military reform which is now conspicuous in China.

In order to illustrate further the progress made by China in the line of military improvements, we must state that notwithstanding the order for guns placed with Krupp, the government pursues without intermission the work of developing and perfecting its own arsenals, presumably to secure with time absolute independence from foreign nations in that respect.

At the present time China possesses large arsenals in the following localities:

1. Hanyang, in the Province of Hupei.
2. Nanking, in the Province of Kiangsu.
3. Kiangnan, near Shanghai, in the Province of Kiangsi.
4 Futschu, in the Province of Fukien.
5. Canton, in the Province of Kwangtung.

Of these several armories, Hanyang is the most important, for it is furnished with the best personnel and machinery, and its productions indicate steady progress. Besides a large steam hammer, two blast furnaces, Bessemer & Martin Steel Works, it includes a gun lathe, a rifle factory and a metallic cartridge factory; one hundred operatives are constantly employed in filling the numerous requisitions sent in for war material.

In the line of small guns, the German rifle m. 98 without barrel case is manufactured here. But while in former years the daily output never exceeded fifteen pieces, since the plant was enlarged and completed by the purchase of additional machinery in Germany last year, twenty-five have been delivered every day. The production could be increased to fifty, but has been limited to thirty-five. The cartridge factory turns out daily 20,000 cartridges. The gun factory is also extremely active, and since the beginning of the present year has been considerably improved. The pieces manufactured are chiefly 3.7 and 5.7 cms. quick firing

guns, of which about fifteen are ready for delivery every month.

The arsenals in Canton and Shanghai likewise enjoy a good reputation. It seems, however, pretty well decided that these technical establishments will, before very long, be transferred elsewhere, namely, the Canton arsenal up the western river to Wuchou and the one at Shanghai to Ping-hsiang in the Province of Kiang-si. The motive alleged for this undoubtedly very expensive undertaking is that greater safety and better protection can be secured for these factories in the interior of the country than near the coast, where they are exposed to hostile aggressions, and where, in the event of war, they would possibly have to be closed altogether.

The proposition to move the Kiangnan arsenal near Shanghai seems to have met with very serious difficulties. Chang-tshi-tung, the viceroy, had originally planned to start a new establishment on a grand scale at Wanchihe, some twenty leagues from the harbor of Wochu in the Province of Anhiu. However, a careful examination of the locality made by the viceroy, assisted by his neighbor colleague the viceroy of Wai-Kuang-tao, convinced him of the unfavorable prospects of his scheme, and led at the same time to the selection of Ping hsiang in the Province of Kiang-si. The decision was made final by the consideration that Ping-hsiang is not only so situated as to be easily defensible, but according to Chinese engineers may, with the help of a few artificial constructions, be transformed into an impregnable stronghold. It is also located near the valuable coal mines of Sheng-kung-pao, which are worked under European direction; and furthermore, a railway leads from this point to the Province of Hunan and connects directly with the river basin of the Yangtse.

Besides the two proposed new establishments at Wochu and Ping-hsiang, to take the places of those at Canton and Kianghan, several other large arsenals are in process of construction and in a more or less advanced stage of completion.

The largest of these is located in Tetshou on the Impe-

rial Canal in the Province of Shantung. Its inception is due to Viceroy Yuan-shi-kai, who intends to create in this place a large establishment for the manufacture of rifles and guns, with the corresponding ammunition. The situation at Tetshou is peculiarly favorable to this object, for by means of the Imperial Canal excellent connections are secured both with the north and with the south, and it is also intended to run the Tientsin Tsinan-fu Railroad directly through Tetshou. The buildings designed for the Tetshou Arsenal, which were nearly completed last winter, have since been made ready for occupation. Consequently, work may be commenced as soon as the machinery is put up, and a portion of the latter has already been obtained from the old arsenal at Tientsin.

In addition to Tetshou the following arsenals now being constructed deserve a brief mention: the arsenal at Nantshang-fu in the Province of Kiang-su, that of Tshang sha-fu in the Province of Hunan, and that of Tsheng-tu-fu in the Province of Szetchuan. Of these establishments the last is the most advanced, and some of its machinery is already mounted.

To complete the enumeration of the Chinese armories we must, in addition to the arsenals of the first rank, mention also the more important among those of lesser scope, in which, from reliable accounts, much activity prevails at times. These are the arsenals of Kai-feng-fu in the Province of Hunan, of Hsian-fu in Shensi and Kweichau in the province of the same name, of Lokou near Tsi-nan-fu in the Province of Shantung, and of Tay-yuen-fu in the Province of Shansi.

The arsenals of Mukden, Kirin and Tsi-tsi-kar, all situated in Manchuria, are no longer in operation since the year 1900.

THE NEW CHINESE ARMY.

(*Broad Arrow*, February 24, 1906.)

RECENT events in China hardly seem to have attracted sufficient attention in this country, though much has been happening which only too clearly points to confirmation of the prophecies that the Chinese army will, in the near future, be a serious factor, the most important indeed to be reckoned with in far Eastern politics. Perhaps the Yellow Peril may be a bogey, but there are abundant signs that the Chinese are beginning to "feel their feet," and may soon cease to be the negligible quantity they have so long formed in the operations of other nations in the Celestial Empire. The occurrences at Shanghai may be made light of as mere periodical or occasional riots, but they, and particularly the action of the Chinese authorities, are the straws which show how the wind blows, and the attitude which Chinese statesmen are taking with regard to Thibet, points in the same direction. When it is remembered that a Chinese army, properly so-called, has never existed, that the military caste has been despised and a soldier regarded as a pariah or at best a coolie, and that so recently as the Chinese Japanese War the "soldiers" turned out for active service with umbrellas and bird-cages and other unwarlike domestic belongings hung round their persons, while their armament for the most part was of the most primitive description, including bows and arrows, with powder—when they had any for their miscellaneous collection of fire-arms—composed of coal-dust, and so on, when all this is remembered the advance that has lately been made in military organization within the Empire is remarkable and deserves careful watching by those whose interests it promises to affect very materially, perhaps sooner than is at present anticipated.

The material, as our own Gordon so clearly proved to us, as well as the present day Wei-hai-Wei regiment, is good, and the rest is only a question of training and a little time, combined with the precautions which experience, not only in China, has shown to be necessary to prevent corruption and

dishonesty in connection with the stores and munitions of war.

It is probably news to many that China has an army at all, yet not only is this the case, but in the process of its development that army has even arrived at the modern stage of holding maneuvers on the most up to date lines followed by European nations, with of course the same unreal situations and the same waste of powder. But that is merely the beginning. A correspondent of *The Times of India* was present at these maneuvers, held about three months ago at Hochienfu, about 120 miles from Tientsin, and his experiences and descriptions of what he saw make interesting and instructive reading. The difficulties of traveling in China are well known, and when 120 miles had to be done in two days, the last sixty of them, from Paotingfu to Hochienfu, on the outside of a woolly Mongolian pony twelve hands high and nine feet round the stomach, it may well be imagined that the journey was rich in incidents, though the pony comes out of it most satisfactorily.

Paotingfu is the headquarters of China's new Imperial army, the center of its military life and newly awakened energy, and it sounds very western and very modern to be greeted on approaching its outskirts by the plaintive notes of the reveille from a bugle out of the shadows ahead, and while the resonant melody of one bugle still hangs in the air, by another and yet another in the old way that one knows so well. On the plain outside the town have been constructed immense barracks consisting of a score of long single-storied buildings forming an enormous rectangular pattern on a huge parade ground. Here the manufacture of soldiers on the latest European lines, and with the usual monotonous repetition of *one, two, three*, by the drill sergeant, is going on from morning till night, and before long the numbers of well drilled troops that China can put in the field may astonish the world. What they may do in the field cannot of course be yet safely predicted, but it will be more than they have done as yet.

On the way from Paotingfu to Hochienfu bodies of troops were constantly being met, small convoys under escort halted

here and there on the road, and sections of cavalry passed at the trot, all being dressed in modern and serviceable uniform, and apparently well disciplined and commanded. It was evident that the Chinaman in uniform looked as like a soldier as the man of any other nation, and one has only to look at the pictures of Chinese troops which have appeared in some of the illustrated papers during the last week or two to be fully convinced of the fact. The road passed through a big camp wherein were counted many hundreds of tents, guns were parked and arms piled, as one sees with any other army. Camp kitchens were busy, fatigue parties passed here and there, sentries were posted, orderlies rode in and out, and the bulk of the men strolled about just as they might in any of the Japanese camps seen in Manchuria. A second camp was pitched just inside a small town, which was congested with men in infantry, artillery, cavalry and engineer uniforms, and the shopkeepers were doing a roaring trade. The men, however, behaved with the utmost civility; rowdyism was totally absent; a more orderly or respectable lot of men it would be hardly possible to conceive; they paid for everything they bought, and the men billeted in inns paid for their accommodations; in short, their conduct, including their punctiliousness in saluting superiors, left nothing to be desired.

Of course this was the first time maneuvers had ever been held in China, and much excitement and interest were manifested both in court and political circles, the Empress expressing much concern as to their success, and appointing certain royal personages to witness them. About forty foreigners received permission to be present, including thirty officers—Great Britian, the United States, Japan, France, Germany, Russia, Italy, Holland, Austria, and Belgium, each sending three attachés. The "General Idea" was that a Blue army had landed near the Yangtze River and was marching northwards through Shantung Province to Peking. On receipt of the news, the forces in Chihli Province were mobilized, and ordered to proceed by rail and road to meet the invaders. Headquarters of the Blue army were at Chinanfu, in Shantung, that of the Northern or Khaki army at

Paotingfu, on the Peking-Hankow Railway, sixty miles northwest of Hochienfu, upon the plain surrounding which the operations were to take place.

The Blue army consisted of twenty-four battalions of infantry, twelve batteries of artillery, three brigades of cavalry, two regiments of engineers, representing one complete and two half-divisions, totaling 17,000 men and seventy-two guns. The Khaki army was composed of eighteen battalions of infantry, eighteen batteries of artillery, a brigade and a half of cavalry, two regiments of engineers, or nearly two divisions, numbering 15,000 men and ninety guns.* In all about 35,000 men were thus being drawn from various points of Chihli and the adjacent provinces and concentrated at a point not less than fifty miles from the nearest barracks, and in some instances several hundreds of miles distant from the military centers to which they belonged. The scheme thus necessitated the employment of a great deal of transport to provide tents, bedding and food for the troops, and involved a completeness of organization which will be readily understood by those who know what it means to provide for an army leaving its quarters. It is in this respect that maneuvers frequently result in fiasco, many being the instances on record where the troops have been marched all day and been forced to bivouac at night without food or shelter. Efficiency in transport and commissariat departments is generally accepted as indicating efficiency in other branches.

The Chinese arrangements on the occasion of these maneuvers were so complete, and worked out so perfectly, as to regularly confound those who anticipated a breakdown in the commissariat, and the consequent looting of villages by starving soldiers. The proceedings lasted about five days. The "Special Idea" recorded that the intelligence received on the

*It will be seen that the above divisional organization is not quite on European lines. In number of men it resembles a British division and also in the number of guns in the case of the Blue army. The number of battalions rather follows Continental ideas, but there is a considerable excess of cavalry and engineers, which may be founded on the experience of the Russo-Japanese War. The number of battalions in a British division is eight, with thirty-six guns, whereas in an Italian, Austrian, French or German division there are twelve battalions, with from twenty-four to seventy-two guns.

day prior to the opening day was that the cavalry scouts of both armies were in touch and skirmishes were frequent. Both sides were pushing forward, and spectators watching the movements in the neighborhood of Hochienfu were able to trace the final advance and massing of the cavalry preparatory to a cavalry charge. The second day was occupied by a general action between the two forces. Days three and four were devoted to operations of the victorious force against the other, which had fallen back and taken up a strong position after its defeat. The culminating maneuver was the advance, after reinforcement, of the army hitherto on the defensive, and a fierce encounter in the open between the two armies after the usual approved fashion. The last day was devoted to a full dress parade and march-past before the Viceroy of Chihli, Yuan-shi-kai, and his staff.

When one thinks of the military traditions of Japan, her Samurai, and the patriotism which is the religion of the people and a lesson to us as well as other European nations, it is not so surprising that Japan should have produced such an army as she put in the field against Russia, and which has placed her in the front rank of nations. But in China the conditions are totally different, in fact the absolute antithesis of those existing in Japan. There were no Samurai, no military traditions; the soldier was despised and treated with contumely, and patriotism did not exist. China, in fact, is not one country, and it may take long to weld its heterogeneous elements into one patriotic whole. But the work has begun, and the army, small as it is at present, is the nucleus round which the process of development will form, until in the course of a generation or two the political importance of the Empire will be very different from what it is now. It is to be hoped therefore that the facts are fully appreciated in our Foreign Office, and they should equally be appreciated by the country at large.

THE HORSEMANSHIP SOCIETY OF BELGIUM.*

INTERNATIONAL CHAMPIONSHIP OF MILITARY HORSES, TO BE HELD AT BRUSSELS AT THE HORSE SHOW, MAY 1906.

THE War Department has received from the Belgian Minister to the United States, through the Secretary of State, an invitation to the army of the United States to participate in the program of the Société Hippique, which takes place at Brussels next May.

Similar invitations have been extended, the Minister states, to the armies of Germany, England, Austria, Spain, France, Italy, Norway, Netherlands, and Sweden; and he expresses the hope that the American army officers will take part in this exhibition of horsemanship.

Owing to the limited time ensuing before the competition takes place, it is hardly likely that our army officers will be able to make proper preparation, especially as the expense of the undertaking would have to be borne by the officers themselves. But a copy of the program has been transmitted to the School of Equitation at Fort Riley, Kansas, for possible participation by officers in some future contest.

* * *

PROGRAMME REGULATIONS.

The object of this competition is to encourage the rational training of the cavalry horse, as well as the true principles of equitation, without requiring, on the part of the horses entered, any exceptional qualities which should be of such a nature as to exclude horses furnished by governmental remount services, or to diminish their chances of success.

To this end the competition will consist of a series of tests of various kinds, intended to show that the horse has been placed in condition, its willingness and the perfection of its training.

* Translated from the French February 18, 1906, by Captain Raymond Sheldon, Eighteenth Infantry. Original received in the office of the Chief of Staff, February 6, 1906.

GENERAL CONDITIONS.

The horses must belong to regiments of the various armies or to officers; in the latter case the entry-form will bear the signature of the colonel, certifying that the horse is regularly ridden in instruction practice or at drill, and that it is the bona fide property of the officer who registers it.

All the events of the military are taken cognizance of by an international board of judges, composed of delegates from the powers represented. This board will decide all unforseen questions of dispute, and its decisions will be without appeal.

Each horseman will be allowed to ride but one horse, and must guide it in all the events.

Only officers of the active army will have the right to enter or ride in any events of the military.

Officers are invited to enter themselves for various tests, subject to the stipulated conditions. With regard to the marching order, that must be absolutely regulation, *including packs.*

Officers using the cuirass will be excused from wearing it.

Horses of foreign officers taking part in the International Military will be stabled and fed gratuitously in the stables of the "Hall du Cinquantenaire."

Notice.—A reduction of fifty per cent. will be asked for the transportation of horses on the principal railways.

FIRST DAY.

Undress uniform; English saddle and bridle; minimum weight, 85 kilos.

A. Test of Endurance (in the morning).

A course of fifty kilometers to be covered by each competitor within four hours' time. No record will be kept of the fastest time; the judges will penalize, after consultation, the competitors who have taken too much time.

After this test, the horses will be examined at a trot, in hand, by the reunited judges who will confine themselves

to eliminating the lame horses or those which they shall have found incapable of taking part in the—

B. Steeplechase (4,000 meters).

Same uniform; same weight.

This event will be held on a race course near Brussels. The terminal point of the fifty kilometers test will coincide with the race-course. Competitors will be allowed two hours for rest between the completion of their test and their steeplechase.

The steeplechase will be individual; the minimum speed must correspond with a gallop of 350 meters a minute; no record will be kept of the fastest time, but a rate not reaching 350 meters will entail a penalty.

This test is intended to show that the horsemen are practiced in daring and vigorous out-of-door riding.

The judges will penalize grave errors only; falls, refusals, shying. The order of merit will therefore result mathematically from the (penalties awarded for) excess of time and faults committed.

SECOND DAY.

Undress uniform with arms and packs; minimum weight, 35 kilos.

Course of 32 Kilometers to be Covered in One Hour Forty Minutes.

No record will be kept of rates faster than those corresponding with the time above mentioned; on the contrary, competitors having taken too much time will lose a certain number of points, as determined by the judges.

Each competitor will individually cover the course; at mid-distance he will be required to go through a *field course in the "Hall Du Cinquantenaire."*

The course must be completed within a maximum time to be indicated at the hour of the competition, and corresponding with a speed of 400 meters a minute.

For this test the obstacles will be as similar as possible to the obstacles (usually) encountered in the field, they will

be nearly solid and will have a height of forty-three inches or thereabout; only knocking with the forehand, refusals, shying and falls will be counted as errors.

THIRD DAY.

Undress uniform; English saddle and bridle; minimum weight, 85 kilos.

Obstacle Jumping Event.

This test is intended to show that the horses entered maintain the facility of management indispensable to a cavalry horse. To this end, the course will contain certain difficulties; the requirement to jump between two flags placed very close together, or to different points, according as the obstacle is passed for the first, second or third time, abrupt stops, half-turns, obligatory dismounting at certain points, etc., etc.

A minimum time will be announced for the completion of the course. Celerity will be taken into account, as determined by the judges.

The obstacle will have a maximum height of forty-five inches.

"Ticking"* will not be counted; the only faults that will be noted are errors of course, excess of time, knocking with the forehand or hindquarters, shying and falling.

Outside of these three days, the judges will set aside certain forenoons to judge the

Training, Strictly Speaking.

Undress uniform; English saddle; any weight.

Each horseman personally regulates his own individual work, being apprised that less account will be taken of the diversity or difficulty of the movements than of the perfection of training for them. A complete understanding between the rider and his mount, the delicacy of his "aids," and his equestrian tact should result in an easy action, one agreeable to watch. No notice will be taken of artificial gaits, such as the "passage," executing the "piaffer," the "pas espagnol," etc., but changing the lead *at a gallop* will be required.

*Grazing the obstacle in jumping.

VALUES OF THE VARIOUS EVENTS OF THE MILITARY.

First Day	30 per cent
Second Day	25 per cent
Third Day	30 per cent
Training, strictly speaking	15 per cent
Total	100 per cent

15,000 FRANCS IN PRIZES.

First Prize.—An object of art valued at 5,000 francs, and a gold medal offered by His Majesty, the King of the Belgians.

Second Prize.—An object of art valued at 3,000 francs.

Third Prize.—An object of art valued at 1,500 francs.

Fourth Prize.—An object of art valued at 1,250 francs.

Fifth Prize.—An object of art valued at 700 francs.

Sixth Prize.—An object of art valued at 600 francs.

Seventh Prize.—An object of art valued at 500 francs.

Ten prizes, each of the value of 250 francs, will be divided among (the owners of) the horses classed immediately after the first seven by the judges.

For full information address, M. A. Dupuich, Secretaire de la Societe Royale Hippique de Belgique, No. 33 Rue des Deux-Eglises, Brussels, Belgium.

The general programme of the Horse Show of 1906 will appear towards the end of March.

UNITED STATES ARMY PISTOLS.

By F. CARTER.

[From *Shooting and Fishing.*]

IN connection with recent articles on United States army pistols, in *Shooting and Fishing*, it has occurred to me that a series of pictures of these pistols might be of interest to its readers.

No. 1 is the first pistol regularly made by the United States government, and corresponds in pattern with the first

United States rifle. The pistol is caliber .54, taking the half ounce round ball, and was made at Harper's Ferry armory in 1807 and 1808, and again in 1814 to 1817.

No. 2 is the North's Berlin (not Burlington) pattern. A contract was given him in 1815 for 500 of them. They were caliber .69, taking the ounce round ball. These had the first brass pan used on any United States arm.

NOS. 1, 2, 3 AND 4.

No. 3 is the pistol made at the Springfield armory in 1818. Only 1,000 were made. They were caliber .69, taking the ounce round ball, and corresponded in pattern to the early pattern musket.

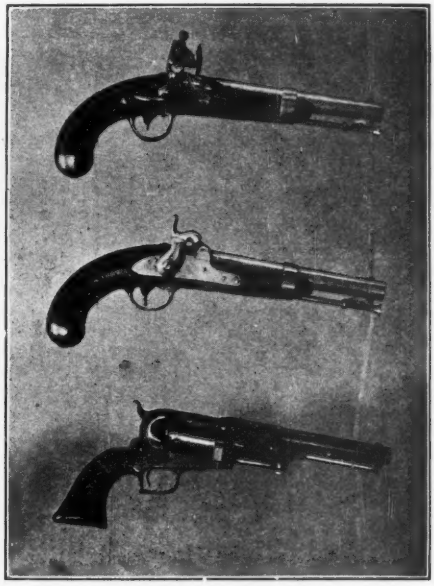
No. 4 is the model 1822, and corresponds in pattern to the musket of that model. The caliber was .54, half-ounce ball. No. 5 is the model 1836, of the same caliber, but lighter, neater, and having a swivel ramrod.

No. 6 is the model 1842, the first percussion pistol used,

and corresponding in pattern to musket of model 1842, caliber still .54.

No. 7 is the heavy Colt revolver mentioned by Captain Vidmer, introduced in 1847, caliber .44, the Dragoon pattern.

No. 8 is the same revolver fitted with detachable stock and elevating leaf rear sight, and called the Mounted Rifle pattern.



NOS. 5, 6 AND 7.

No. 9 is the pistol carbine, model 1855, with detachable stock, caliber .58, Minie bullet, elevating leaf rear sight.

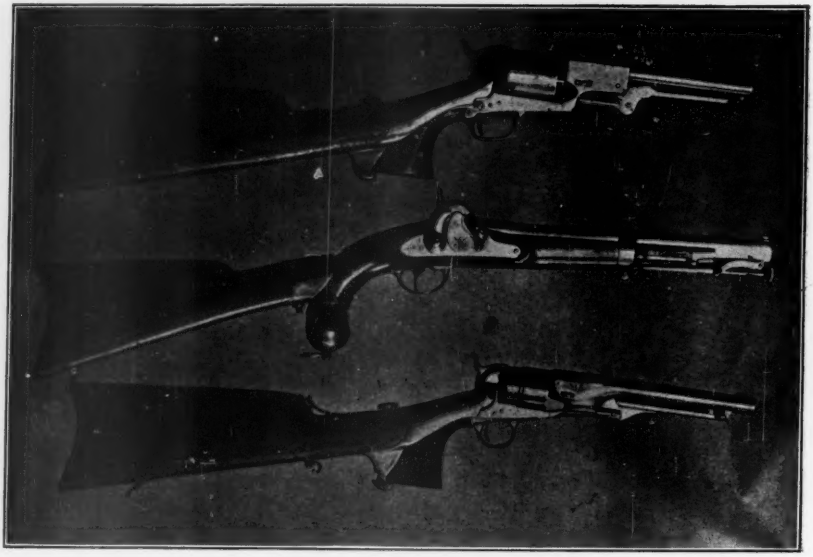
No. 10 is the caliber .44 Colt revolver, Civil War pattern, with detachable stock, but without elevating rear sight. These stocks, which contained a canteen, were practically never used, and very few were ever issued.

No. 11 is the caliber .45 Colt, model 1873, artillery pattern; the cavalry pattern had a longer barrel.

No. 12 is the caliber .45 Smith & Wesson, Schofield pattern, issued for trial against the Colt, but discarded as less serviceable.

No. 13 is the present caliber .38 double action Colt, that proved such a failure in the Philippines from lack of stopping power.

In studying this series, it is interesting to see how the United States Ordnance Department has three times gone through the process of trying to combine a pistol and carbine in one weapon, regardless of certain fundamental difficulties. Some of these are as follows:



NOS. 8, 9 AND 10.

1. No pistol fit to be carried and used as such can handle a load powerful enough to be effective at rifle ranges.

2. The barrel is so short that, even supposing the aiming to be perfect, good accuracy cannot be expected.

3. The sights are so close together that aiming will be far from perfect.

4. The rear sight is brought so close to the eye that only an abnormal eye can focus upon it, if of the open pattern. An aperture sight might be used for the carbine, but would be impracticable for the pistol.

Also, though this is of less importance, the elevations when held in the hand and when firmly backed up by the detachable stock will be found to differ greatly.

I recommend the Ordnance Department to study its own past productions, and the reasons for its success or failure.

Lately in the Philippines many line officers and enlisted men have demonstrated the viciousness of the regulation method of carrying the pistol. But this is nothing new, for in our own West many a soldier has lost his life through it.

NOS. 11, 12 AND 13.

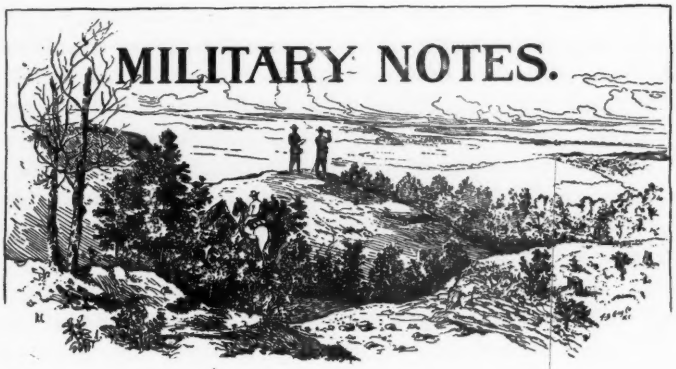
A soldier on leave was apt to visit the nearest town. After a few drinks of frontier whisky he often got into a row with some local "bad man;" and the latter, who carried his pistol where he could get at it, usually killed the soldier before he could draw his weapon.

Another objection was that at every step of the man or jolt of the horse the heavy pistol drew the belt with a jerk across the abdomen. This made carrying the pistol a constant punishment, sometimes causing rupture, often stomach-ache, and always fatigue. When the pistol is properly carried, that is on a loose belt, and low down, opposite the

upper part of the thigh, this does not happen, for the whole weight and jolt are supported by the solid bones of the pelvis. Also the pistol can be got at when wanted, a matter of even more importance to the wearer than the danger of stomach-ache.

Another position in which the pistol can be carried is in front of the left groin, with the butt toward the center of the body, and the barrel pointing downward and outward at an angle of forty-five degrees. While not quite so comfortable as the cowboy position, this is far better than the United States army regulation; and the pistol can be drawn very quickly. In Mexico I noticed that the police carried their pistols in this way.*

*The JOURNAL has just received the following information from the office of the Chief of Ordnance: "The Chief of Ordnance has adopted experimental revolver and automatic pistol cartridges, caliber .45, and has invited all revolver and automatic pistol manufacturers to enter a competitive test to be conducted in September next by a board of officers to be convened for the purpose. The bullet weighs 230 grains, and a proper charge of smokeless powder is used to give a muzzle velocity of 800 feet per second in both kinds of arms. The experimental cartridges for the two arms differ only in that those for the automatic pistol have a cannelured shell, and those for the revolver a rimmed shell."



"A LESSON IN PICTURE."

By Captain M. F. STEELE, Sixth Cavalry.

IS there not a slight mistake in the excellent cuts shown under the above heading in the January JOURNAL? Ought not the bridoon reins to be on the outside and the curb reins in the center? The pictures have certainly reversed the order in which the reins are usually held in the hand. In the usual way, which I believe is the English method and therefore, of course, the method generally affected by American horsemen, the curb reins are separated by the fourth finger (the finger next the little finger), and the snaffle reins are held, one in the palm of the hand, the other between the second and third fingers, exactly the reverse of the order shown in the pictures.

Now, in horsemanship the Englishman usually has a reason for a thing; the American adopts it simply because it is English and asks not the reason; and the American, if possible, exaggerates the English thing, sometimes even to ex-

travagance. For instance, the Englishman wears wide riding breeches because they are cooler, do not bind, are more comfortable every way; the American wears his in folds all over the saddle and horse because they are English. The Englishman posts in his saddle because it is easier on horse and rider; because it makes riding at the trot a delightful, invigorating exercise, instead of a punishment. The American *pumps* in his and shows a foot of "atmosphere" between himself and the saddle at each stride, because it is English.

Theoretically the horse should be thoroughly rein-wise before he is ridden on the curb; hence there is no occasion for drawing or pulling one curb rein at a time. Slightly moving the hand to right or left, so as to bear the curb rein on the animal's neck, should make him respond. But if he is not rein-wise and does not respond, he should be made to obey by drawing one bridoon rein, and not one curb rein, provided he be ridden with bit and bridoon, as he should be. This explains why the Englishman places his snaffle reins as far apart as practicable in his hand, and separates his curb reins with only one finger. Having the back of his hand up, by simply turning the hand on the wrist—without moving the forearm at all—he can draw one snaffle rein and loosen up on the other enough to make any ordinary turn with his mount, even though the animal be not perfectly rein-wise. Perhaps there may be some better reason for holding the reins as they appear in the pictures referred to, an explanation of which would help to an understanding.

After all, is either of these methods the best for us to adopt, now that the CAVALRY JOURNAL has at last succeeded in persuading the powers that be that the bit-and-bridoon is the right sort of bridle? A most excellent horsemaster, Mr. Quinton, of Trenton, New Jersey, well known to many horsemen in the army, does not hold his reins in that fashion, and especially does not instruct others to do so, because, he says, carrying the bridle hand with the back up, tends to throw the elbow out from the side in an ungainly position. So it does. For ordinary riding Mr. Quinton carries his bridle hand in the exact position shown in our drill book—knuckles vertical and thumb pointing to the front; he sepa-

rates his curb reins with the little fingers, as in our drill book, and his snaffle reins with the middle finger. This, also, is the method Anderson uses.

This method affords none of the theoretical advantage of drawing one snaffle rein at a time, without the assistance of the other hand, like the English method; but it is a simple and easy way to hold the reins, far more easily acquired by the trooper who has always ridden with a single rein, and by the recruit, than the English method or the similar method shown in "A Lesson in Picture."

The simplest method of them all, however, is the one shown in the last cut, with the notation, "Best grasp of four reins in left hand for school riding." This is the method used by the great Russian horsemaster, Fillis. It enables one to ride habitually on the curb rein, which is right, after the horse and hand are both properly trained. It also enables one easily to take either or both snaffle reins in the right hand, for the purpose of managing a horse not rein-wise; to loosen up on the curb rein and ride with the snaffle at a ditch or hurdle, or on route marches, when the horse need not be kept collected, but may be allowed to slouch along at his ease. And it makes it easy to pass the reins from one to both hands, or the reverse.

Without having given the matter a thorough trial, I am of the opinion that this method will fulfill all our purposes. I hope other cavalry officers will send their views on the subject to the JOURNAL, and that the right and simplest method, whatever it may be, will be adopted for our service.

I do not believe the English method or the method illustrated in "A Lesson in Picture" is the simplest.

* * *

Ft. HUACHUCA, A. T., Feb. 18, 1906.

To the Secretary U. S. Cavalry Association:

SIR:—In the series of pictures entitled "A Lesson in Picture," there is one that has been much discussed at this post, and some further enlightenment would be acceptable.

Exception is taken to the proper adjustment of the bit and bridoon in the first picture.

1. Is the bit properly adjusted?

2. Is not the curb too long and the mouth-piece too high?

3. Is not the throat-latch too tight?

In regard to the other pictures these questions came up:

4. Why not use the bridoon reins on the outside?

5. Is not the outside grip the strongest, and has it not the most leverage?

6. Does it not equalize the hand better to have the most powerful rein on the inside where the grip is weakest?

7. Does not the seventh picture seem to prove this, as the bridoon reins are taken up with an outside grip?

8. In the last picture, would it not be better to separate the bridoon reins with the forefinger?

9. Is it not a weak and uncertain grip to have both reins come through one grip?

Respectfully,

R. VANS AGNEW,
Veterinarian Fifth Cavalry.

THE OBJECT OF "A LESSON IN PICTURE."

THE JOURNAL is happy to state that the object of its publication in the last issue, of how to hold four reins, is being accomplished. Being certain that the four-rein bridle was soon to be the bridle of the service, the JOURNAL considered it wise to stimulate ideas among our horsemen as to the proper hand to be used. Being convinced that the hand represented in "A Lesson in Picture" was the best for the service, we printed it. That all should agree with us we did not for a moment believe; indeed, had we believed that we would not have printed it, for what is the use of wasting space over something about which all agree. The picture has called forth more comment than any one thing that has appeared in the JOURNAL for years. It is quite probably true that the majority of riders that have not tried

the hand represented are in favor of some other hand, something on the order of the school hand, represented in the last plate of "A Lesson in Picture."

The pictures were published with the main idea of getting our officers interested, and then those that are interested and feel that the hand represented is not the best will send their ideas to us, and they will be given as much notoriety as the "Lesson in Picture." By this means, and better than by any other, we shall reach the proper conclusion as to what hand to use and what we want to adopt when the four-rein bridle is furnished to the army.

In this connection we wish to state that we have been informed by the Ordnance Department, that it is now manufacturing a number of cavalry bridles with the bit and bridoon, for issue to the service for trial. And we are informed by the Secretary of the School of Application for Cavalry and Field Artillery at Riley, that these models will be issued to one squadron each of the Eleventh, Twelfth, and Fifteenth Regiments for trial. Whether the bit being made is the common bit and bridoon, or whether the bridoon is the Boucher model, as recommended by the board, we are unable at this moment to state. But as soon as issued for trial a large plate will be given in the JOURNAL of the bridle that the Department has furnished us.

Returning again to the subject of the hand to be adopted, as suggested above, we are not at all obstinate in our view of the hand to be used by our soldiers. If we have sufficient reason for changing our present idea, which is to use the one represented in "A Lesson in Picture" we shall change soon enough. So far we have seen no reason for change, even after reading the articles above given, which Captain Steele and Veterinarian Vans Agnew have sent us.

As for the Veterinarian's questions, given above, we give below answers that we consider still leave the "Lesson in Picture" at the front. We will take them up in order, having numbered them in our print of the original, and answer them as we understand them, and we believe the answers cover the questions fully.

Question 1. Yes.

Question 2. *Not* for a horse with a perfectly supple jaw. The mouth-piece can be lowered to position exactly opposite the chin groove and curb chain so shortened as to make a minimum angle for the branches with the bars of thirty-two degrees for an extremely hard mouth horse.

Question 3. No.

Question 4. You can; and some people prefer it. But it is believed the other method will be the easiest for enlisted men and just as good results are obtained. This is one of the great objections that Captain Steele urges against the hand represented.

Question 5. It is believed the inside grip is the strongest, and therefore a good place for the strong pull on the snaffle. We may not be in accordance with many people in believing the third finger grip the strongest, but it certainly is in our hand, and hence the reason for placing the snaffle there.

Question 6. Answered by the last question, as we do not accept the idea that the inside grip is the weakest. However, we think this idea of equalization, as the Veterinarian calls it, a matter of small moment.

Question 7. The reins are taken up temporarily to give an upward lift to the head to allow the curb bit to work, and are immediately dropped. If mere restraining action was desired the snaffle would be allowed to slip until a strong pull was felt on the curb reins.

Question 8. If anyone cared to take the trouble in arrangement.

Question 9. The hand represented is not intended for a puller, but for the delicate work of the trainer, who should use his reins like silk threads.

We are informed that at Riley, where considerable instruction is being given in four-rein work, the opinion is that the hand represented by the cuts is the easiest to teach enlisted men. And all results desired have been gained by it. Since last summer we have been using this hand exclusively and like it better than our old, which was much like the hand described by Captain Steele. But we

have also tried at times the trainer's hand, and found that the hand was tiresome if kept too long.

Captain Steele's idea of theory may be right, but there are so many beautiful theories in the world that cannot stand the test of experience that we prefer one that has been satisfactory where it has been tried. Of course officers having become accustomed to a special way of holding four reins will find that way the best, and they are welcome to their opinion and method; but an easy way must be found for the enlisted men. In teaching them there should be little theory and no intricacies. The horse should be ridden with two reins in each hand until thoroughly broken, and then, after all, where the snaffle and curb reins lay is a small matter. For that reason we suggest the hand that occasions least fatigue.

We shall wait reports from those troop commanders that are fortunate enough to be in the squadrons that draw the four rein models. We trust they will recognize the opportunity to do the army valuable service, and we sincerely hope they will not be backward in expressing their opinions about the hand to be used, whether it agrees with our recommendations, or whether they find one to be best that is entirely different from any that we have ever heard of. What we want is the best.

At the request of the Secretary of the School of Application of Cavalry and Field Artillery, the JOURNAL has printed a card with the hands placed side by side, and has sent one of these cards to each cavalry and artillery organization in the service. These cards were sent to the post adjutants at posts where mounted organizations were serving. Should it happen that any organization has failed to receive the card, the JOURNAL would be pleased to send one on application.

MORE ABOUT CURB CHAINS.

CAPTAIN W. M. WHITMAN, THIRTEENTH CAVALRY.

I HAVE read with interest every article on bits in the CAVALRY JOURNAL. With the hope that continued comment may bring about improved conditions in this part of our cavalry equipment, I add my brief contribution upon the subject of the ordnance curb chain.

Having fallen in command of a troop of old horses, I noticed at drill that a number of them were dancing in ranks with noses high in the air, and that these became unmanageable at the fast gait. A few days later, drill being in the riding hall with watering bridles, I looked for the star-gazers and found them plodding along quietly with the rest. The obvious conclusion was that the trouble lay with the curb. Upon examination I found what probably every other troop commander has noticed, that the hook of the ordnance chain was attached to the bit in such a manner that the tender skin of the horse's lip was caught between the lower half of the hook and the mouthpiece of the bit; this action, which was apparent only when the reins were gathered, was in effect like a pair of pincers, and caused intense pain to the horse, who tossed his head in a mute appeal for relief.

I made it a practice thereafter to take notice of every horse that I passed, and found a large number of cavalry and artillery horses undergoing the same torture.

Some troopers had discarded the chain for a strap, but the pinching action was still apparent with most of them. Moreover the ordnance hook is an exasperating affair to adjust, especially if one attempts to shorten it while the bridle is on the horse.

My remedy has been to run a stout wire across the diameter of the upper ring, and attach the curb hook to this; the upper ring then acts as a shoulder to prevent the hook from pinching the lip.

In conclusion, I would say that, inasmuch as I would object to having my own horse ridden on a curb by a recruit,

or by a poor horseman, or by a man of uncertain temper, I likewise object to having my troop horses so ridden. They should be equipped with bridoon and curb attached to one headstall so that either could be removed, and should have a curb chain that could be quickly adjusted. After the trooper has once learned to handle four reins, which is a matter of a very few lessons, he has the means of applying a variety of pressures to suit the varying conditions of gait; he can quiet the horse with the snaffle and bring him to attention with the curb. A heavy-handed recruit can torture a horse with a curb, especially if the chain has any fault of adjustment. A light snaffle will meet many of the requirements of our drill, and while relieving the horse of much discomfort, will serve as a stepping stone toward teaching the recruit the occasional use of the curb, until such time as his lightness of hand will admit of his using both bits in harmony as occasion requires.

I am interested to know if other troop commanders have had trouble with the ordnance chain, and if so what remedy they have applied.

THE HIGH SCHOOL OF HORSEMANSHIP.*

EDWARD L. ANDERSON, AUTHOR "MODERN HORSEMANSHIP."

LA HAUTE ÉCOLE is a silly phrase that embraces about everything that is taught to a horse beyond being "quiet to ride." There are the circus tricks, such as the absurd *Spanish walk, the step and leap, kneeling*, etc.; then there are the accepted airs of the *manége*, such as the *curvet*, the *pesade*, the *balotade* and the *capriole*, and finally the useful *halt in the gallop, gallop-change* and *pirouette wheel* of scientific horsemanship. Neither the circus tricks nor the manége airs can be of any service to the cavalryman, for all the dis-

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*TERRITET, SWITZERLAND, February 8, 1906.

Secretary U. S. Cavalry Association.

SIR:—The interest I have in our cavalry has induced me to offer the few lines sent herewith.

cipline that these would procure would follow the training of the horse in the three essential things mentioned. In the European cavalry schools nothing is demanded of the pupil beyond what is absolutely necessary for a mounted officer to know. It is true that the instructors practice what we call the high school movements, but that is only for exhibition purposes. While watching a splendidly fought game of *le jeu de barre* in the Viennese Military Riding School the director, Major General von Rothenberg, said to me: "Every cavalryman should be able to pirouette and change in the gallop;" and it seems to me that should be the opinion of all soldiers. A man mounted on a well trained charger could kill with a penknife a well armed adversary whose horse could not be readily handled.

There should be no question as to how a horse should be put into gallop right or gallop left. Let it be borne in mind that the horse should turn to the right in gallop right, to the left in gallop left. The indications for teaching these gallops must be the same as those which demand the turns, or the horse will be confused and take false strides. Any horse will take gallop right if it be collected, the head bent slightly to the right, the impulses demanded by the rider's left heel; and these would be the indications for turning to the right. Gallop left may be made in the same manner, right and left aids being interchanged.

CAVALRY IDEAS.

By First Lieutenant A. L. HOPKINS, South Dakota Cavalry.

Watertown, So. Dak., February 5, 1906.

I FEEL confident that covering the underside of the regulation saddle with sheepskin would be very unsatisfactory because of the general plan of the saddle. After a considerable experience with ordinary range saddles, and five years National Guard service with regulation saddles, I consider the

regulation saddle fully as good for military purposes as any saddle I have ever used. The objection I have to a range saddle is its great weight and the heat which comes from a sheepskin lining. It strikes me that the combination we are in search of is lightness, and yet be able to protect the back of the mount. I am quite fully convinced that nine people out of ten put too much blanket under the saddle.

The captain of this troop rode three different horses through three different encampments, and on two practice marches of approximately 100 hundred miles, without any blanket except a saddle cloth made of canvas and some kind of woolen material, and these different horses came through without any injury to their backs in any way, shape or manner, and this man weighs approximately 220 pounds; and I might state further that the horses ridden by Captain Munger were horses that had not been used for saddle purposes to any extent prior to their use for the encampment and practice marches above referred to.

As to myself, aside from the last encampment, I generally rode a different horse each day, because of the fact that the members of the troop were always glad to turn over to me their green horses and let me ride them for a day, and then take another. This last encampment I took our private driving horse that had not been saddled more than three or four times for some months past, and rode him every day in drill, parades, etc., and also rode him an average of ten miles additional each day, and his back was as sound and smooth as a piece of silk when I got through, and all I had under the saddle were two burlap sacks and one army blanket, folded according to my own ideas.

During the five years that I have been connected with the cavalry squadron here in South Dakota, in our troop I have known of but two sore backs, and we never had a saddle horse or horses. We are obliged to use in the National Guard service here any horses that the members of the troop happen to have or happen to hire. They are always good animals, but absolutely ignorant when we start drilling in the spring or go to camp.

The one thing as to saddle blankets that I paid particular

attention to was that the boys should not put too much under the saddle, as I consider that sore backs are usually the result of scalding, which is produced by too much blanket.

The one thing which I consider to be the greatest abomination on earth in connection with the cavalry service is the bit, and it strikes me as exceedingly strange that we, who are boasting of twentieth century civilization, have not something to put into the mouth of a horse besides the relic of old Spanish cruelty, which is now prescribed. The members of our troop, while nearly all of them are born horsemen, have had more trouble with the regulation bit than from any other source. It might be possible to accustom the horse to the use of the bit now prescribed, but I doubt it. In a good many cases where members of my troop brought into camp a fine, high-spirited, high-bred, beautiful animal that would not stand for a curb bit, I let them take it off and put on the ordinary straight bar bit which is used for workhorses, and then the trouble disappeared. A man might have use for a curb now and then, but under all ordinary circumstances, it is merely a nuisance.

THE WOODEN BROADSWORD.

By Captain C. C. SMITH, Fourteenth Cavalry.

ON the 15th of last November a field day was held at this post (Jefferson Barracks, Mo.), and among other events was a mounted broadsword contest between troops of the Ninth Cavalry.

Being one of the judges of this event I was astonished at the number of swords that were broken and rendered useless, and recalled at once that at the government fencing school in Kyoto, Japan, the two-handed swords used by the Jap fencers were made of bamboo; also that Captain S. P. Adams, Fourteenth Cavalry, instructed his troop at Camp Overton, Mindanao, with broadswords that he had made of bamboo, and which would not break.

Why not supply us with bamboo broadswords for fencing practice? They could be made in Manila by the Ordnance Department at a very small cost.

For the benefit of officers interested in polo, it is well to know that good polo mallets can be gotten at the Bilibid penitentiary in Manila at an extremely low cost as compared with what is paid for them at sporting establishments in this country.

BRITISH STRENGTH.

A BRIEF perusal of the current army estimates shows that we had on the 31st of March last, 217,000 regular troops, not including 75,600 European troops in India. If we deduct 61,000 men, the garrisons of the colonies, we find that we have in the United Kingdom 156,000 regular troops, besides which the army reserve was set down in the estimates at 104,000 men. That neglected force, the militia, however, only figures at 140,000, including 7,500 reservists. The yeomanry establishment was 28,000, while that of the volunteers figured at 344,000, the "effectives" of the last named being 245,000. Counting, therefore, only effective volunteers, and including the army reserve, we had actually within the United Kingdom 673,000 trained men. Our contention is, however, that the militia must be raised to a strength of 300,000 men in the ranks, with a reserve of another 100,000. In other words, we must raise, if necessary by ballot, 260,000 more militia men. Consequently, even if the strength of the volunteers is to be limited to 230,000, as recently officially stated, we have shown conclusively that Lord Robert's million standard can soon be in being if steps are taken to make the militia what it always was recognized, our constitutional force on which we can rely for active service abroad in a war of any magnitude. Turning to India, we have 75,600 European troops in that country and a splendid native army, 157,000 strong with 25,000 reservists. Of Im-

perial service troops there are 15,000 men, and India also musters 31,000 efficient volunteers. Our total of fighting men in India is therefore 303,600. Altogether then we have, including 61,000 regular troops in colonial garrisons, a total in India and our oversea possessions of 364,600 men. Dealing, therefore, with the figures already mentioned, we could muster 1,297,600 men, provided the militia had an establishment of 300,000 men and a reserve of 100,000. So far, however, we have not taken credit for the local forces of the British colonies and protectorates, which, according to a return lately published by the General Staff, War Office, amount to no less than 235,000 of all ranks. We have, therefore, a grand total of 1,532,600 trained men available for the defense of the Empire, of which there are 300,000 European regular troops with 100,000 reservists, and 157,000 men of the native army in India with 25,000 reservists. In fact, out of the total of 1,532,600 men we can count on 582,000 regular troops, European and native. Yet the "active" army of France or Germany is only about 600,000 strong. Unfortunately for us, however, our vast empire necessitates our military forces being scattered over the globe, from which obligation our continental neighbors are free owing to their limited foreign possessions. In a future issue we will give the strength of the local forces in each of our forty-one colonies and protectorates. We may mention, however, that the Canadian forces muster 105,235 of all ranks, of which there are 86,000 infantry, 8,000 cavalry, and seventeen full batteries with 3,500 men, 4,000 garrison artillery, and nearly 1,000 engineers. Speaking of rifle clubs, of which there is so much talk and little done in the mother country, the Australian rifle clubs muster 31,204 members, nearly the whole of whom are "effective."—*Broad Arrow, February 10, 1906.*

THE SERVICE PISTOL.

By Major S. D. ROCKENBACH, Philippine Scouts.

IN considering a service pistol, it is necessary at the outset to agree to the proper uses of the arm. That a pistol will shoot accurately at one hundred yards and over is nothing in its favor; better use a rifle.

A good service pistol is assumed to be one that is accurate up to fifty yards for bull's-eye target practice, is a deadly (stopping) close quarter fighting weapon, a quick firer, and substantially and simply made so as to keep in order with the usage of the cavalry service. The .38 service Colt appears to be the only pistol which a majority of cavalry officers agree possesses all the requirements, except the most important, a deadly close quarter fighting weapon. It has not the necessary shock or stopping effect. This defect is attributed generally to caliber. It is not questioned that a .45 bullet moving with the same velocity as a .38 has more shock effect than the .38, but the assertion, frequently made, that the wound made by the .38 which failed to stop a man, would have stopped him if made in the same place by the .45, has not been demonstrated. It is not believed that the so-called "New Service .45 Colt" with its long heavy powder charged cartridge with cylindrical bullet would do much better. The old .45 Cowboy Colt with its short light powder charged cartridge and short hollowed bullet has a national reputation for stopping power.

The stopping effect of a bullet depends upon something more than caliber: 1st, the sensitiveness to shock of the man shot; 2d, the locus of the wound; and 3d, the velocity, shape and size of the bullet.

To illustrate: Sensitiveness to shock and the consequent incapacitating or deterring effect generally increases with the culture of the man shot. A wound that may stop and incapacitate for further aggressive action a civilized man, may only increase the fury and efforts of a savage to destroy his enemy; especially is this true if the savage is imbued

with the idea that, if killed while killing his enemies, his future bliss is assured.

A shot in the brain will stop any man. A horse drops instantly from a .38 bullet striking the brain. A deer shot through the heart with a .45 Winchester will run fifty yards. In the case of a man shot with a .32 revolver, the bullet penetrated the left cheek and entered the brain; death was instantaneous, so that the man fell backwards; his cigarette remained in his mouth and smoked up. In another case, a man was shot through the belly with a .45 carbine so that his intestines protruded. He walked over a mile, and his wound was only discovered by his death two hours after the shot.

The bullet from a .30 Krag ball cartridge can be fired through a pane of glass without shattering the pane. Decrease the velocity of the bullet by reducing the powder charge and the pane will be shattered. The bullet from the gallery cartridge will shatter the pane. A spent bullet may knock a man down insensible or stop him, yet inflict a slight wound. Velocity appears to control the shock effect.

It is not to be expected that the influence of civilization will perceptibly affect the sensitiveness of the savage to shock in the near future; nor can we hope to attain the skill in pistol shooting necessary to hit a man in the head with every shot, but it is believed the shock effect of the pistol can be increased without decreasing its accuracy up to fifty yards.

The trooper must be instilled with confidence in his pistol, otherwise it is of little use in his hands; this can be instilled only by target practice. For accurate bull's-eye target shooting a well-made long barrel pistol, using a cartridge with cylindrical bullet and large powder charge is advantageous. Such a cartridge is not essential or even desirable for close quarter fighting. A multi-ball cartridge, two balls and a small powder charge, it is believed, has greater shock effect than either the service .38 or .45 cartridge.

The old .45 Springfield carbine, worn till it is practically a smooth bore, with multi ball cartridges is the best short range brush fighting gun in the service. Fifteen men shot with it in the present year stopped, three recovered, one with his right arm amputated. Self-preservation is the first

law of nature. Against the savage with kris, head knife, spear or arrow, the so-called humanitarian should either come and practice his theories, or keep quiet; should he come without police protection (a cool protector with a stopping weapon) the theorist will succumb to the fittest.

Before the .38 is discarded it should be demonstrated that a .38 cartridge suitable for target practice and having the necessary shock effect cannot be made. It seems practicable to furnish pistol target ammunition (the present cartridge) and pistol service ammunition that will stop a man; at least this seems worthy of trial.

The writer is not acquainted with the reasons which led to the change from the .45 to the .38, but he is reluctant to believe that the change was made without recommendations and cogent reasons;* nor does he think it reasonable to again incur great expense, and change back to the .45 till it is demonstrated that the .45 will do all that is claimed for it, and the .38 cannot be made to do just as well. The case seems somewhat similar to that of the shotgun. Very few men possess more than one shotgun, yet their shooting is very much varied by varying the powder charge and size of the shot.

The undisputed claim for the "New Service .45" is that it is a better club than the .38; this value has an offset in weight.

The writer carries in the field a .45 Colt, 3⅞-inch barrel, police model (as that fits his hand) using short cartridges. He believes this pistol, due to the shape and small velocity of the bullet, has greater stopping power at close quarters than the "New Service .45," with a six-inch barrel and powerful cartridges. He once saw a cowboy filing two inches off the barrel of a beautiful six-inch barrel Colts for which he had just paid a month's salary. The reasons given for his act were that he could draw the short barrel quicker, and when he hit a man he stopped. The short barrel Colt is not as accurate for bull's-eye target practice as the service .38. Accuracy must be retained, but careful experiments should be made

*That the JOURNAL did not favor this change, see articles in No. 20 and No. 22, April and October, 1893, by First Lieutenant (now Major) Eben Swift, and an article in No. 23, December, 1893, by Major Alfred A. Woodhull, Medical Department, (now Brigadier-General, retired.)

with varied ammunition to ascertain if the shock effect of the .38 cannot be increased without loss of accuracy.

With the present ammunition the .38 reminds one of the remark made by a grizzly bad man of the far West, when a pink and white tenderfoot from the East drew a .32 on him: "Don't pop that thing, you might make me mad."

TANAY, RIZAL, P. I., December 12, 1905.

STOLEN OR EMBEZZLED GOVERNMENT MILITARY PROPERTY.

INFANTRY AND CAVALRY SCHOOL AND STAFF COLLEGE.
FORT LEAVENWORTH, KANSAS, January 16, 1906.

Colonel C. B. Hall, U. S. Army, Fort Leavenworth, Kansas.

MY DEAR COLONEL:—I have the honor to acknowledge the receipt of your favor of the 18th ult. concerning the right of the military to search for and seize government property in the hands of persons who have no right to the same, and the proper procedure to be taken in such cases.

The question of what procedure to take when government property, particularly the clothing of soldiers, has been unlawfully disposed of, is an old and much mooted one, and it is therefore, with considerable diffidence that I undertake to answer it, notwithstanding the fact that the law, if properly executed, seems ample to cover the case.

I shall attempt to answer your questions in full, and therefore as a preliminary quote your letter in full.

FORT LEAVENWORTH, KANSAS, December 18, 1905.

My Dear Major Boughton:

Will you please give me legal information on the following? I would suggest also that the point raised might be valuable as questions to be given the student officers as you did in the last case I sent you, and which seems to have excited a great deal of interest and favorable comment.

Information has been received at post headquarters that government property, consisting mainly of clothing, has been

sold to or pawned with civilians in the city of Leavenworth, Kansas, and that the property is now concealed in residences, stores, or on the premises of these citizens.

Has the military any legal right to enter and search the premises of a civilian for government property, and to use force if necessary? If not, what legal steps must be taken by the military to secure such a right? As an officer of the army, how would you proceed in such a case?

The above is not a supposititious case, and I will be very glad if you will let me know *your* opinion as soon as possible, as I desire to take legal steps.

Very respectfully,

(Signed) CHAS. B. HALL,
Colonel Eighteenth Infantry,
Commanding.

First as to the criminal nature of the above acts and the laws thereon.

Act March 3, 1875, 18 Stat. L., 479. An act to punish certain larcenies and the receivers of stolen goods:

"*Be it enacted, etc.*, That any person who shall embezzle, steal, or purloin any money, property, record, voucher, or valuable thing, whatever, of the moneys, goods, chattels, records, or property of the United States, shall be deemed guilty of felony, and on conviction thereof before the district or circuit court of the United States in the district wherein said offense may have been committed, or into which he shall carry or have in possession of said property so embezzled, stolen or purloined, shall be punished therefor by imprisonment at hard labor in the penitentiary not exceeding five years, or by fine not exceeding five thousand dollars, or both, at the discretion of the court before which he shall be convicted.

"SEC. 2. That if any person shall receive, conceal, or aid in concealing, or have or retain in his possession with intent to convert to his own use or gain, any money, property, record, voucher, or valuable thing whatever, of the moneys, goods, chattels, records, or property of the United States, which has theretofore been embezzled, stolen, or purloined from the United States by any other person, knowing the same to have been so embezzled, stolen, or purloined, such person shall, on conviction before the circuit or district court of the United States in the district wherein he may have

such property, be punished by a fine not exceeding five thousand dollars, or imprisonment at hard labor in the penitentiary not exceeding five years, one or both, at the discretion of the court before which he shall be convicted.

"And such receiver may be tried either before or after the conviction of the principal felon, but if the party has been convicted, then the judgment against him shall be conclusive evidence in the prosecution against such receiver that the property of the United States therein described has been embezzled, stolen, or purloined."

This statute is directly applicable to the case in question, and makes the embezzling or stealing of public property, and the receiving of such property so embezzled or stolen, felonies punishable by the Federal courts.

Of course, if the person committing the felony is in the military service he may be tried for violation of the 60th Article of War.

Civilians in Leavenworth receiving embezzled or stolen government property are liable under Sec. 2 of the above Act, and their conviction, when the property embezzled or stolen is military in character, should not be difficult, for its mere possession by a non-military person would be a strong presumption, ordinarily, of guilty knowledge.

But the property usually disposed of by soldiers is clothing that has been issued to them, and in this case the question immediately arises, Is such clothing government property, or has the complete title vested in the soldier? Putting aside this question for the present, attention is called to the following statute which makes the purchaser or pledgee of soldiers' clothing punishable in the Federal courts (Sec. 5438, Rev. Stat. U. S.):

"* * * and every person who knowingly purchases or receives in pledge for any obligation or indebtedness from any soldier, officer, sailor, or other persons called into or employed in the military or naval service any arms, equipments, ammunition, clothes, military stores, or other public property, such soldier, sailor, officer, or other person not having the lawful right to pledge or sell the same, every person so offending in any of the matters set forth in this section shall

be imprisoned at hard labor for not less than one nor more than five years, or fined not less than one thousand nor more than five thousand dollars."

THE RIGHT OF SEARCH.

"Has the military any legal right to enter and search the premises of a civilian for government property, and to use force if necessary?"

The answer to the above question or questions is "yes," but this is hedged about with many qualifications as will be seen below. The statute law on this subject is as follows (Sec. 1242, Rev. Stat. U. S.):

"The clothing, arms, military outfits and accoutrements furnished by the United States to any soldier shall not be sold, bartered, exchanged, pledged, loaned, or given away; and the possession of any such property by any person not a soldier or officer of the United States shall be prima facie evidence of such sale, barter, exchange, pledge, loan, or gift. Such property may be seized and taken from any person not a soldier or officer of the United States, by any officer, civil or military, of the United States, and shall, thereupon, be delivered to any quartermaster or other officer authorized to receive the same."

Sec. 3748, R. S., is almost identical in meaning with Sec. 1242, and is therefore not quoted. It declares that the property which may have been sold, etc., may be seized wherever found

From these statutes it is seen that the right of seizure by the military is limited to *property that has been issued to a soldier*, and does not apply to government property in general, and that the seizure, if made, must be by an officer.

These statutes were originally enacted during the Civil War, and were evidently intended to furnish the military a summary means of recovering government property that had been issued to soldiers, and which they had unlawfully disposed of, the stress of circumstances rendering recovery by the slower legal processes impossible.

When the necessity for such seizure actually exists it may be resorted to, but unless the necessity is *real* this summary

procedure, in my opinion, should be avoided. Such procedure would ordinarily involve the invasion of the premises and privacy of citizens, and would be in derogation of their constitutional rights of being secure in their persons, houses, papers, and effects, against unreasonable searches and seizures (4th Amendment).

If the necessity for such search and seizure is real, they would not be unreasonable.

It may often happen that troops on the march, or in other situations, may not be within reach of the necessary legal agencies that would enable them to recover property unlawfully disposed of by soldiers, and that delay would result in the total loss of the same. In such cases it would be the duty of the officers interested to seize the property wherever it could be found.

As originally enacted these statutes contained a provision making punishable with fine and imprisonment persons purchasing from soldiers their arms, clothing, etc., but this provision was not incorporated in the Revised Statutes, an omission which has been remedied, so far as government property is concerned, by the Act of March 3, 1875 (statute first quoted in this paper).

But in making seizures as authorized in Sec. 1242, to what extent are officers authorized to search for property? This section is not a general search warrant, and therefore an officer would not be justified in making a general search. Should he proceed in this manner he would probably be held liable in damages. He should search only those places where he has *probable cause* for believing that the property is concealed or stored; and probable cause sufficient to justify the officer in making the search will exist whenever, from the information in his possession, he would be willing to go before a magistrate and swear out a search warrant.

In regard to the use of force in making seizures of government property under Sec. 1242, see below, under "Procedure."

PROCEDURE.

"Has the military any legal right to enter and search the premises of a civilian for government property, and to use force if necessary? If not, what legal steps must be taken by the military to secure such a right? As an officer of the army, how would you proceed in such a case?"

The above questions have been answered in part only. To give an outline of the procedure that would ordinarily be taken, let us assume that government property has been purloined from the post and disposed of in Leavenworth.

1. The interested officer would make a preliminary investigation sufficient, if possible, to determine who are the guilty parties, and where the property is concealed or stored. He should remember that to secure conviction evidence is necessary.

2. He would then take the necessary steps to secure the arrest of the suspected parties, and to recover the stolen property. To recover the property he would secure a search warrant from the proper official, and in company with the civil officer charged with its execution, would search the premises in question, identifying the property if found.

Generally the same persons who can issue warrants for the arrest of suspected offenders, can also issue warrants for searching premises for the recovery of stolen or embezzled goods, or for procuring evidence of a crime.

If the person who has stolen the property is a soldier, he may, of course, be arrested by the military authorities. If he is a civilian, the following law governs:

ARREST OF OFFENDERS AGAINST THE UNITED STATES.

Sec. 1014, Rev. Stat., U. S.:

"For any crime or offense against the United States, the offender may, by any justice or judge of the United States, or by any commissioner of a circuit court to take bail (*infra*), or by any chancellor, judge of a supreme or superior court, chief or first judge of common pleas, mayor of a city, justice of the peace, or other magistrate, of any State, where he may be found, and agreeably to the usual mode of process against

offenders in such State, and at the expense of the United States, be arrested and imprisoned, or bailed, as the case may be, for trial before such court of the United States as by law has cognizance of the offense."

By the Act of March 28, 1896, the office of the United States Commissioner (superseding that of the Circuit Court Commissioner, *supra*) was created. This official has various powers prescribed by law, similar on the civil side to those of a notary public, and on the criminal side to those of a magistrate or justice of the peace. He is authorized to take oaths and acknowledgments; to issue warrants for offenses against the United States; to cause offenders to be arrested, or bailed, for trial, etc.

If it is desired to secure the arrest and trial of some offender for violation of a Federal law, the U. S. Commissioner is the proper person before whom to make the complaint, though it may be laid before any of the officials enumerated in Sec. 1014, R. S.

As to the nature of a complaint that would justify the issuing of a warrant, it has been held that it must be on oath of personal knowledge, and not merely on an oath of affirmation of mere belief (U. S. v. Burr, Fed. Cas. No. 14692). Something more than mere suspicion is required.

THE USE OF FORCE WHEN ACTING UNDER SECTION 1242 R. S.

Should the property embezzled or stolen come within the terms of Sec. 1242 (property issued to soldiers), the officer interested must elect whether he will proceed summarily under the statute and seize the property himself, or in the usual way, by means of a search warrant. As stated above, if the interests of the government will permit, it is generally advisable to follow the customary legal procedure.

Should the officer elect to act summarily he should proceed with due caution and regard for the rights of others. Before invading private premises he should make known his purpose, demand the surrender of the property in question, and have *probable cause*, supported by the personal knowledge of some reliable witness, for believing the property to be

located therein. Should he be refused or opposed he may use force, and if the property is found he incurs no liability, provided he used no more force than was necessary. But let us suppose the property is not found, then the question immediately arises, Was the search unreasonable? Did the officer have probable cause? Juries are very apt to think that he did not. Then, too, if within the limits of a State, an officer proceeding summarily is liable to commit some act that may lead to a criminal prosecution in the State courts. What protection has he in such cases, and how should he proceed?

The following is quoted from the decision *in re Fair:*

"An officer or agent of the United States who does an act which is within the scope of his authority as such officer or agent cannot be held to answer therefor under the criminal laws of another and different government.

"The care, judgment, and discretion which should be exercised by an officer of the United States in the performance of his duties as such officer are not to be measured by the criminal laws of a State.

"When an officer, in the performance of his duty under the laws of the United States, exceeds his authority, he may be sued in the State courts by any person injured by reason thereof, but when the act was done in good faith, and without malice, he is not liable to a criminal prosecution in such courts."—*In re Fair et al., Circuit Court D. Nebr., March 23, 1900; 100 Fed. Rep. 149.*

But when an officer acts under the supposed authority of the United States, by what criterion are his acts measured? Who is to determine whether he was properly performing his duties under the laws of the United States, or that he acted in good faith and without malice?

Let us suppose that an officer or soldier, in the performance of his duties, has committed some act which he supposed was authorized or required by Federal laws, and that he is arrested therefor by State authorities on a criminal charge and held for trial.

As soon as possible he should apply for a writ of habeas corpus to a United States court or judge. The writ must issue as a matter of right, but the petitioner is not neces-

sarily entitled to his discharge, and may be remanded to the State authorities for trial.

This question was fully decided on January 2d (this month) by the United States Supreme Court (*Army and Navy Journal*, January 13, 1906) in the cases of Lieutenant Drury and Private Dowd, Ninth Infantry, indicted for murder in Alleghany County, Pa., for having shot a civilian suspected of having stolen government property from the Allegheny Arsenal at Pittsburg. At the time of the shooting all parties were outside of the military reservation. Drury and Dowd petitioned for a writ of habeas corpus to the United States Circuit Court, but the court, after the hearing, refused to order their release.

The question presented to the court was whether it should "interfere to prevent the trial of the petitioners upon the indictment in the State court, take the petitioners out of the custody of the authorities of the State, and discharge them finally without trial by any civil court in the regular administration of justice." The judge refused to do so, and his action was sustained by the Supreme Court. The reason for this decision will become apparent when we consider that if the judge had taken the prisoners out of the hands of the State authorities, there would have been no court before which they could have been tried, for jurisdiction over such cases has not been conferred by Congress upon the Federal courts.

From all this it follows that a military person, claiming to act under the authority of the United States, is liable both civilly and criminally to prosecution in the State courts, for acts done within their jurisdiction; but the law provides, with few exceptions, for the ultimate decision of such cases in the Federal courts. If he is sued in the State courts for an act done under color of authority of the United States, he can generally if he so desires, have the cause transferred to the proper Federal court. If he is prosecuted criminally for such an act, he can apply for a writ of habeas corpus to the proper Federal court or judge. The court or judge may or may not order his discharge. If discharged, he is no longer liable in the State courts for that act. If he is remanded to the State court for trial and convicted, he can still appeal to the high-

est court of the State having jurisdiction of the case, and if the decision of the lower court is there affirmed, he can then carry the case to the Supreme Court of the United States.

In making summary seizure of government property under Sections 1242 or 3748, officers should remember that the government sometimes disposes of its property itself, and that therefore it is possible for civilians to have acquired legal title therein.

When an officer has instituted criminal proceedings as outlined above, he should assist the civil authorities as far as possible by acquainting them with all the sources of evidence of which he may have knowledge.

IS CLOTHING ISSUED TO A SOLDIER HIS PERSONAL PROPERTY, OR DOES THE TITLE THERETO STILL REMAIN IN THE GOVERNMENT?

If it is still government property then the Act of March 3, 1875 (the one first quoted in this paper), relating to the larceny or embezzlement of government property, would be ample to protect the interests of the government, and it is probable that when passed the Act was supposed to include clothing issued to soldiers.

The difficulty seems to have arisen from the inconsistent attitude of the War Department itself in regard to this matter. At one time such clothing was regarded as government property. Then came the ruling of the Judge Advocate General in April, 1893 (Digest, 1901, Par. 11), as follows:

"Clothing issued and charged to a soldier is not now (as it was formerly) regarded as remaining the property of the United States. It is considered as becoming, upon issue, the property of the soldier, although his use of it is, for purpose of discipline, qualified and restricted. Thus he commits a military offense by disposing of it as specified in this article (17), though the United States suffers no loss."

Subsequent to this ruling, however, there has been a tendency to return to the original idea. Thus in 1898 it was held (Digest, 1901, Par. 2276) as follows:

"A soldier's title to clothing issued him is a qualified one, requiring that he use it in the service while it is serviceable and he is yet a soldier. But on his discharge his title to such clothing becomes absolute, and he may then sell, etc., the same to a civilian and give a valid title to it."

The following is a recent ruling of Judge Advocate General Davis (*Army and Navy Journal*, December 9, 1905):

"It is true that upon the discharge of a soldier he may carry away with him the clothing and blankets he receives while in the service, the title then vesting in him without question. So, also, on his death the clothing becomes a part of his estate. Until such discharge or death, however, the soldier has but a qualified title to his clothing and blankets, and sufficient title remains in the United States to warrant a prosecution under Section 5438 of the Revised Statutes, this statute being broad enough to cover the case, whether blankets be considered 'clothing' or 'public property.'"

It is difficult to see how clothing issued to soldiers can be considered his property when the government retains absolute control over the same. The soldier has only the use, the same as he has in the case of his arms and accoutrements, and the manner in which this use shall be exercised is controlled absolutely by the military authorities.

The President by law prescribes the uniform of the army and the quantity and kind of clothing which shall be issued annually to the troops of the United States, and the annual appropriation acts set aside so much money for the purchase of clothing, camp and garrison equipage, fuel, etc., for the army. Why should clothing occupy a different status from that of other military supplies? The conception that clothing issued to soldiers becomes their personal property has sprung from the manner in which accounts in regard to the same are kept, and the fact that balances of what is called the soldier's clothing allowance are given them on their discharge; but this latter is merely a reward given by the government to secure care and economy on the part of the soldier.

Clothing becomes the soldier's property on his discharge simply because the government chooses to give it to him at

that time. It could unquestionably take it from him and give him civilian garments instead.

In closing, attention is invited to the following letter:

DEPARTMENT OF JUSTICE
OFFICE OF UNITED STATES ATTORNEY,
Eastern District of Kentucky.

COVINGTON, January 9, 1906.

Captain Milton F. Davis, Fort Leavenworth, Kansas:

SIR:—I am requested by the adjutant of the Fourth Infantry at Fort Thomas, Kentucky, to furnish you with copy of opinion handed down by the judge in the cases against Durrah and Dixon, convicted at last term of the Covington court, for purchasing clothing, etc., from soldiers, and for having in their possession stolen property of the United States knowing it to have been stolen.

They were indicted under two counts. The first, for purchasing and receiving in pledge clothing, etc., from soldiers in violation of Section 5438, Revised Statutes, and in the second count, for having in their possession stolen property of the United States, knowing the same to have been stolen, in violation of Sec. 2, Act of March 3, 1875, 1st Supplement, page 88.

Durrah was tried first. Before the trial was concluded he withdrew his plea of not guilty, and pleaded guilty to the second count, and was sentenced to be confined in the penitentiary at Atlanta, Georgia, for a year and a day. Dixon was also put on trial under a plea of not guilty, and was found guilty by the jury on both counts, and was also given one year and one day in the penitentiary at Atlanta. There was no written opinion handed down by the judge. He simply charged the jury orally, following the indictment and statute.

Respectfully, J. H. TINSLEY.
U. S. Attorney.

The act of March 3, 1865, referred to in this letter, is the one first quoted in this paper.

It would be very desirable to secure a decision in a Federal court in regard to the title to clothing that has been issued to soldiers.

Very respectfully,
D. H. BOUGHTON,
Major, Eleventh Cavalry.

Editor's Table.

ELIMINATION.

A reasonable flow of promotion is necessary for life in any business. This movement should be doubly sure in the army, where the standard of individual intelligence required of the officer should be higher than the standard elsewhere. For it is to be remembered that the army is the last safeguard of the nation when all others have been swept away. Other businesses and other departments may fail, but once let the army fail the failure is irretrievable. The standard for proficiency of the army official must be so sure that not only does it insure against failure but absolutely guarantees safety.

How can we secure this standard in our officers, a standard composed as it is of intelligence, probity and patriotism? By giving men a commission, which, when young is quite commensurate with their value, but afterward letting later conditions swallow them in a pernicious system that will eventually crush out all their desirable characteristics? Shall we keep them down to small positions during their active and energetic years, appointing mediocre material alongside and then shoving *all* along the road that leads to innocuous desuetude? This question needs no answer, for it answers itself. The question that does arise is, What is the remedy whereby we can secure a reasonable flow of promotion so as to open up a life of usefulness and so hold out to young Americans an attractive career in the army?

The question is an all important one. We have an example of what the present conditions will result in if we will

turn to the army of England. The new Secretary of State for War, Mr. Haldane, is of the opinion that the British army is short of officers of the right sort, the thinking men, and that there are too few of them in the cavalry and the line, though lately he indicates a change of opinion. Slowness of promotion, discouragement of enthusiasm in the lower ranks of the service, and the poor prospects of the officer generally are the real causes of the unpopularity of the army amongst the promising youth of to-day. And the same causes are present with us, except we have not at present reached the stage that England has, though we are rapidly nearing the time when able young men will no longer care to enter the army. The thinking and working men in our army could most of them to-day command salaries two or three times as large as the ones they are drawing from the government, had they as young men embarked in a business career. So unless we solve the question of offering attractive careers, our army about the time of the next war will be composed of mediocre men of little ambition and enthusiasm.

It strikes us that the solution has been given, but all have not, as yet, appreciated the fact. The remedies for the present condition with its destroying tendency we have with us, and sufficient, we believe, at present, to accomplish the purpose for which intended, which purpose is to secure such promotion in the army that the officers will not deteriorate through dry rot.

We are provided with a purgative in the shape of the general court martial, whereby we may rid ourselves of the criminal element. And not long since Congress provided an emetic of examinations whereby we can cast out the worthless. And the size of the doses in both these remedies has been left to ourselves to determine from the exigencies of the case. That these doses have been properly given in the past no one for a moment believes. Most frequently they have been too small, and at times the medicine has practically been thrown out the window, leaving the sickened body to recover as best it may without any remedy whatever. The result has been that we naturally continue in the same

diseased state as before simply because we have not the moral courage to properly administer the remedies sitting at our very elbows.

Noticing no improvement some unthinking persons, or possibly self-thinking, have suggested new remedies, forgetting that the old ones have not yet failed because they have not yet been properly tried. The most popular of the new remedies is the panacea, "selection," warranted to kill or cure. Every reasoning man in the army knows the result will be kill and not cure if such a violent poison is administered. Yet we must expect some new remedy from Doctor Congress if we continue to disregard his present prescriptions and still howl for relief. We must attend to our own case, administering sufficient doses of our present remedies to destroy the germs that have already resulted in deadly stagnation. Means must be taken to secure nurses that will measure out the large doses and then see that these doses are taken in accordance with need.

To accomplish this, nothing more is needed than a permanent examining board. The artillery practically has this at present. The board may consist of any number of officers, though there is no reason why we should depart from the number we have now. But the officers must be ones that are sure to perform the rather disagreeable task of sitting at the bedside until a cure is effected. They must be carefully selected from the officers of the army with a view that they shall possess that valuable attribute, absolute justice, and must also be men well known to have none of the milk of human kindness in their makeup. They should be like the perfect judge, justice personified with no tinge of mercy. We have such men in the army, indeed, if we believe the civilian, we have few of any other kind. Such, however, we know is not the case, but we have a sufficient number to warrant carrying out the treatment at present prescribed.

This permanent board may meet this month at this department headquarters and there administer the remedy of examination to all afflicted in that department; then next month it may move on to the next department, the afflicted ones in that territory being sent in to department headquar-

ters for treatment. All artillery officers to be examined may be sent to Monroe,* and all cavalry and infantry officers may be sent to Fort Leavenworth for examination. Before the Spanish War nearly all the cavalry and infantry officers were sent to Leavenworth. This method may entail a little added expense in the way of mileage, but what is expense to a very sick person, such as we must admit we are at the present time.

Everyone knows that our examinations should be strict, uniform, and impartial. That they are all or any of these, at present is doubtful, unless we admit that they are impartial. As to uniformity, there is only one way to secure it, and that is that the same board shall examine all officers. A correspondent, writing to an English military paper, has the following to say about the examination in the British army: "It must be known to most officers that at some military stations the examinations are extremely difficult, whereas at others it is quite the reverse." This might just as well have been written for our own army. We have heard officers within the last three weeks say they hoped they would be ordered to *this* board and not to *that* one. That our examinations would be strict under the above outlined scheme is axiomatic. They are so by construction.

We believe that we have in our hands the means of curing ourselves. How foolish then that we should fail to effect the cure. Nothing so asinine can be imagined as a sick person that will not get well because he will not take advantage of a sure and speedy cure. Yet here we are in the very condition of said asininity.

No new legislation is needed to carry the above recommendation into immediate effect. And it cannot be too quickly done. We have in mind some officers that are soon to come up for examination for their promotion. Under the present system are they going to pass? Certainly they are, and yet they are about as little fitted for the command of troops, companies, or batteries, as six weeks old babies are fitted for riding thoroughbreds. And when we think of the

*The artillery examinations are now held at Fort Monroe and San Francisco.

able, energetic, and industrious officers, but slightly below them in rank, that will always be held below these incompetents, our indignation is not capable of being expressed in readable language. The more so, as we hold the means to right such glaring foolishness.

There is another feature in this connection that is well worth thinking of. It is said that in a government such as ours no method can ever be adopted that will do away with political pull. We quite agree with that, but instead of accepting it in full and lying supinely on our backs, we believe that a sort of high license regulation will follow the above scheme. When political pull is exerted for preferment or favor, it is usually the case that the one to be benefited has some little ground upon which to base his asking in the first place. But what ground has an officer to base a request upon who has failed in an examination upon his professional attainments? Of course the request may be made, probably will, but we have in our mind a picture of the Pull of a deficient officer asking for favors at the hands of the War Department or at the Executive Office. It is a sorry picture, and one in which we believe only the most shamefaced Pull would care to figure. We rather imagine this Pull would slip in at the back door of the War Building or the White House, asking contritely for favors, in place of stalking in at the front, boldly demanding that this be done.

Have we, then, any need of House Bill No. 13377, which is to increase the efficiency of the army by selections for retirement? We certainly have. For should the above recommendation be carried out to its fullest a time would come when we had gotten rid of all incompetents and yet have our army full, and the stagnation would be the same as now. To provide against such a state the present bill is an absolute necessity. Moreover there is one drawback in the examinations that cannot be amended except by legislation, and that is, the year of preparation allowed one for a second examination after having failed upon the first. That this should ever have been granted can only be explained in the mercifulness of the hearts of our Congressmen. That an officer should always be prepared for his work is one of the

first requisites of military service. Should war break out, is the enemy going to sit down and allow us a year in which to prepare our officers so that they may know their duties? The idea is absurd, but no more absurd than allowing a year's preparation to a man who should be kicked out of the service if he does not come up to requirements at any time, no matter when you take him. It is an absurdity only to be granted by a Congress actuated by too much kindness of heart. However, it may not be of quite so much importance as it appears, for once a person has failed, the chances of his passing our itinerant board are much smaller than with the present boards, scattered all over the Union.

Then at present the examinations stop when a man has become a major. Why this should be we cannot imagine, unless it was expected that the present system of examinations would be carried out as above indicted. We suppose an officer who had successfully passed through our soulless board for three separate examinations, would need no further test of his ability. But we are not sure that we are satisfied that, under the present conditions, examinations should cease with the promotion to a majority. At least the higher grades should be subject to a physical examination, and that is accomplished by House Bill No. 13377.

For the above reasons there is necessity for the passage of the bill. We have not been able to spend time upon a thorough study of the present bill, and perhaps the fears of some may be well grounded. The only objection that we have so far seen worthy of consideration is that perhaps retirements will come too rapidly, whereby the service will be deprived of men whose value is far above the average. That we should lose valuable officers of years experience merely to shove young men in at the bottom should not be the object of any bill. The real object is to eliminate those that have ceased to possess ambition or desire for hard work. But possibly (we are by no means sure), the present bill may be the means of shoving out some of our most valuable men before their sphere of usefulness has been rounded out and completed.

A proviso, leaving the question of necessity of the proportionate retirements to the board, might be a safeguard

against forced retirement of men that no one wishes to see leave the army. Should some such saving clause be added, we anticipate there could be little objection to the bill, unless possibly from some who fear any kind of elimination. The objection of these should count for naught.

As for the graded retirement feature of the bill, it is, in the main, a correct idea. We have in mind in speaking thus, the killing of appointments of men over sixty years old as captains in the quartermaster or other departments to serve for one or two or three years, and then retire on three-fourths pay for the rest of their lives. We suppose the government in throwing its insurance around its faithful officers of life service never dreamed of such gross abuse. But in the present stage of our national life it seems that too many checks cannot be made upon graft. However, there must be some means of regulating a graded retirement measure. That a young officer of one or two years' service, dangerously wounded and incapacitated for the rest of his life, should be retired on two and one half to five per cent. of his salary, is an injustice that should not be permitted. And any officer, whose health is undermined by service in the tropics, should not be made to feel that his retirement will leave him in a condition where he will be unable to meet his most meager expenses.

If the present bill can be so amended to meet the two above conditions it should receive the unhesitating support of the army. And we believe if so amended the only carping critics will be those that fear retirement under any bill or any measure. And these are the ones we want to rid the service of, so their criticisms count for little.

The bill is attracting so much attention we give it in full below and direct careful attention to it and recommend a study of it in all its provisions.

SELECTIONS FOR ARMY RETIREMENTS.

H. R. 13377, Mr. Hull:—

A bill to increase the efficiency of the army of the United States.

Be it enacted, etc., That the President be and he is hereby authorized to prescribe a physical examination of all officers of the army of the grades of major and of lieutenant-colonel to determine their fitness for promotion: *Provided*, That should any such officer fail in his physical examination and be found incapacitated for service, by reason of physical disability contracted in line of duty, he shall be retired with the rank to which his seniority entitled him to be promoted; but should the incapacity be found to have resulted from his own misconduct he shall be honorably discharged from the army, with one year's pay.

SEC. 2. That when at the end of any fiscal year the average number of vacancies for the fiscal years subsequent to the passage of this act in the grade of colonel in the cavalry, artillery or infantry of the army, has been less than twenty-five per cent. of the authorized number of lieutenant-colonels in each arm respectively; or, in like manner, when the average number of vacancies in the grade of lieutenant-colonel has been less than eighteen per cent. of the authorized number of majors; or, in like manner, when the average number of vacancies in the grade of major has been less than nine per cent. of the authorized number of captains; or, in like manner, when the average number of vacancies in the grade of captain has been less than fourteen per cent. of the authorized number of first lieutenants; or, in like manner, when the average number of vacancies in the grade of first lieutenant has been less than eighteen per cent. of the authorized number of second lieutenants, the necessary additional vacancies to bring the average in each grade in each arm up to the percentages above named, shall be created as hereinafter provided.

SEC. 3. That upon the occurrence of a deficiency of vacancies as set forth in Section 2 of this act, the Secretary of of War shall convene as soon after the first of July as prac-

ticable, a board of five general officers of the line of the army, preferably seniors, for the purpose of selecting, from the active list of the several arms, the necessary number to be retired. The board shall have placed at its disposal the complete efficiency and medical records of all officers, as the list stood June 30th preceding, in those arms and grades wherein less than the required average of vacancies exists. Each member of said board shall swear or affirm that he will without partiality, favor or affection, and having in view solely the special fitness of officers and the efficiency of the army, perform the duties imposed upon him by this act.

The board shall then proceed to select for retirement from the several grades the requisite number from among those officers found to be, from any cause, least qualified for further active service, the number taken from each grade being such as to cause the average number of vacancies therein to conform to the percentages set forth in the preceding sections: *Provided*, That no colonel shall be retired under the provisions of this section when the effect thereof would be to promote a lieutenant-colonel of less than three years' service as such unless the total commissioned service of said lieutenant-colonel exceeds twenty-eight years; nor shall any lieutenant-colonel be retired under the provisions of this section when the effect thereof would be to promote a major of less than five years' service as such unless the total commissioned service of said major exceeds twenty-five years; nor shall any major be retired under the provision of this section when the effect thereof would be to promote a captain of less than ten years' service as such unless the total commissioned service of said captain exceeds eighteen years; nor shall any captain be retired under the provisions of this section when the effect thereof would be to promote any first lieutenant whose total length of commissioned service is less than ten years; nor shall any first lieutenant be retired under the provisions of this section when the effect thereof would be to promote any second lieutenant of less than four years commissioned service; *And provided further*, That in computing the total length of commissioned service there shall be included therein any commissioned service in the

U. S. Volunteers. The proceedings and recommendation of the board shall be in writing; shall be signed by all the members, a majority governing, and shall be transmitted to the President, who shall thereupon by order transfer to the unlimited retired list the officers who have been selected as provided in this act.

SEC. 4. That each officer retired pursuant to the provisions of this act, except as provided in Section 1 hereof, shall be entitled to retired pay at the rate of two and one-half per cent. of the pay he was receiving at the date of his retirement for each completed year of service or major fraction thereof: *Provided*, That retired pay shall never exceed seventy-five per centum of the maximum pay of the grade.

SEC. 5. In computing the authorized commissioned strength in any grade, as required in Section 2 hereof, the officers detailed in accordance with existing law for stated tours of duty in the various staff departments, shall be included in that arm wherein they hold permanent commissions.

SEC. 6. All laws or parts of laws in conflict with the provisions of this act are hereby repealed, and nothing in this act shall be construed as changing the method of promotion now provided by law.

ETHIOPIANISM.

"Natal is having some trouble with the natives over a hut tax lately imposed. Her relations heretofore with the natives have been very happy, there having been only one small outbreak, and that several years ago, namely, in 1873. It may be that the present trouble is a mere local disturbance, but again it may mean that the Kaffir uprising is a sign of a general fermentation in the native mind throughout Africa. An English paper states that this is, perhaps, a natural consequence of the Boer War which has been intensified by what it calls Ethiopianism, which is a curious mixture of religion and race prejudice imported from America. The

demon of unrest is further stirred in the emotional negro by the failure of Germany to crush the comparatively insignificant Hereros and Hottentots."—*The Broad Arrow.*

If our trouble in this country with the negro proposition finds an echo in Africa, who could blame the nations there interested should they call us to account for our action as a civilized nation in handling the inferior race? It might easily happen that a nation, by its actions indirectly influencing the welfare of another, would violate one of the imperfect rights of nations And should Germany and England, the nations most interested in Africa, under this right request a modification of our policy toward the negro, are we in a position to give them a satisfactory answer? The race question in this country is, by many of our people, considered the most important problem that confronts us as a nation, but we very much doubt if the above quite probable consequence has ever attracted any attention heretofore. We believe it well worth serious thought and study.

THE BRITISH CAVALRY JOURNAL.

In the early part of January last we received the following letter:

"*The Journal of the United States Cavalry Association:*

"I beg to forward for you acceptance a copy of the first number of the *Cavalry Journal* for Great Britain and the Colonies.

"I trust you will overlook the many shortcomings incidental to a newly started publication, and will give it your favorable consideration.

"I beg to ask permission to quote from time to time some of your articles bearing on cavalry, as they would be of great value and interest to our readers. I should of course acknowledge their source.

"With kind regards, believe me,

"Yours truly,

S. BADEN-POWELL."

We were very glad to acknowledge the receipt of the letter from the distinguished cavalryman, and on receipt of the *Cavalry Journal*, which followed shortly after, carefully went over the same. We are glad to welcome into the field of cavalry publications so lusty a youngster. We saw little of the shortcomings of which the General spoke in his letter. The *Journal* is artistically gotten up, good paper, large print, and with a characteristic khaki-colored cover. The articles are good and quite likely to successfully carry out the purposes of the publication, which are to circulate information concerning cavalry matters in the British and foreign armies, and to bring the various branches of their mounted troops, regular and auxiliary, both at home and in the colonies, into closer touch with each other, by encouraging the development and interchange of ideas.

The price of the *Journal* will be $2.50 per year, and all communications should be addressed to the Editor *Cavalry Journal*, Royal United Service Institution, Whitehall, London, S. W.

We trust many of our officers will be subscribers to the British *Cavalry Journal* and incidentally thus return the compliment that has been paid us by the numerous subscriptions on our lists from British officers.

FIVE YEARS A DRAGOON.

"Five Years a Dragoon ('49 to '54), and Other Adventures on the Great Plains." The last issue of the JOURNAL saw the conclusion of the intensely interesting articles under the above heading, from the pen of Mr. Percival G. Lowe, of Leavenworth, Kansas. Due to continued calls for these articles to be put into book form, Mr. Lowe has decided to issue a book containing the articles, with additions such as he thinks will be of interest to the students of that period of American history. Readers of the JOURNAL will remember that the series in the JOURNAL lasted for two years, and there can be little doubt that every reader of the JOURNAL will be glad to possess Mr. Lowe's book.

The book is to be brought out by the Hudson Press, of Kansas City, Missouri. We have not as yet seen any of the advance sheets, and so we reserve further notice, so that we can thoroughly go into this remarkable history and give it the credit that it deserves. Of course the articles in the JOURNAL form a large part of the book, but there has been an enlarging of the JOURNAL'S text and an addition of much that is interesting to military and general readers.

BOOKS ON THE RUSSO-JAPANESE WAR.

We are happy to state for the benefit of our readers that, unexpectedly, we have found a really great book dealing with the subject of the late war. Judging from all the matter heretofore published, good though some little of it was, we had not anticipated that any really creditable work, other than compilation of official reports, such as was Wood's book, would appear for some length of time. Probably not till the newness of the conflict had worn off and reliable information could be gathered and viewed in the proper perspective. It is true the book we have just finished reading is partisan, and that must be taken into consideration when studying it, but the author poses as nothing else than as an Englishman, whose country is an ally of Japan.

The book is entitled "The War In The Far East," and is written by the military correspondent of the *London Times*. As the JOURNAL has had occasion to give as reprints, two articles by one of the correspondents of *The Times*, David Fraser (see the October, 1905, and the January, 1906 issues), we had an idea when we first saw the notice of this publication that we were familiar with the author. But we could get no information from the American publishers, for they stated they did not know the name of the author, neither were they sure that the author was the same as the one that wrote a similar work on the Boer War. However, on reading the book, we are convinced that the work is not that of one person, but really the work of several correspondents, all situated in positions advantageous for reliable information.

When the reports from these various correspondents reached London, they were taken in hand by an unusually well informed military person, thoroughly digested, and under his careful supervision allowed to appear in the columns of *The Times*. We had an idea that possibly this marvellous person was none other than Lord Roberts himself, so powerful are the articles and so gifted with what might be termed almost divine prophecy. But from what we have since learned we believe that the mind in the London office is not that of any English general officer, but one not unfamiliar to accurate readers in the British Empire. This however is only a hazard of ours, and one can only take it as opinion.

"The War In The Far East" is a book composed of articles taken from the *London Times*, published from time to time during the terrific struggle. Occasionally the hand of the historian, writing with the knowledge of after events, sweeps into a chapter, but not often.

So we find the pages of this work, having been written during the heat of conflict as it raged day by day, possess warmth, color, and partisanship, but withal a clear and careful statement of what is so indubitably the truth that we hardly question it. We never have read a work where we had so little mental strain in transporting ourselves to the scene of actual conflict. We seem to move with each unit of the Japanese armies, and can see the separate retreats of the Russians almost as though we were present on the field, and we found ourselves many times in the intensest strain while reading of the great battles of Liao Yang and The Shaho.

We quote the following from the preface:

"The writer has thought that an account of the campaign, written, as these pages have been written, from day to day, might serve as a useful reminder that those who direct armies and fleets have to deal with a number of factors of which history sometimes takes insufficient account, and that, in relation to the intentions and proceedings of the enemy, these leaders have to rely largely upon intuition and judgment, and have rarely before them all those nicely tabulated facts and certainties which are at the disposal of the ultimate historian when the latter distributes praise and blame. These pages, therefore, the writer hopes, may enable the reader to

picture himself more nearly in the position of the leader in the field, than he can contrive to do when studying an historian, who surprises the secrets of the future by writing after it has passed, and knows beforehand the direction in whichhe is going and the catastrophe of the tale. By recognition, in this manner, of the dense fog which surrounds all war before the air is cleared by some terrific encounter, the public may be encouraged to realize the gravity of the problems confronting the higher command, and to extend to those who have, hereafter, to direct our armies and the fleets in war, a large share of that inflexible confidence, loyalty, and sympa thy which are such an inestimable support in the day of trial to a leader of men when hard beset.

"So far as circumstances and early publication permit, these articles have been revised and such new matter has been introduced as we have hitherto been favored with by the respective combatants. The chapters dealing with the battles of Liao Yang and Mukden have been completely rewritten, and free use has been made of articles contributed to *The Times* by correspondents in various parts of the world, notably those by the representative of the journal in Tokio, whose long experience of Japan has been of such profit to the readers of *The Times* throughout the course of the war.

"Most of these articles have been translated into Japanese by Mr. Mori and republished in book form by the leading Japanese paper, the *Jiji Shimpo*. The much too favorable reception they met with on the part of eminent officers of the Japanese army and navy has not been without influence in causing the publication of this book. The writer was fortunate in securing the services of Mr. Percy Fisher, for the preparation of the maps and plans to accompany the text. The work they have entailed, owing to our scanty knowledge of the topography of the theater of war, will appeal to all cartographers. Mr. Fisher returned from Japan last year, and has been engaged for many months upon the compilation of these plans from all available sources, and the writer hopes and believes that the result of his labors may be of serious service to those who have hitherto been without proper means for forming a balanced and impartial judgment upon the strategy and tactics of the campaign."

We can give no quotations from the text that follows for we found, after going into the work for a few pages, that we had marked so much for quotation that we should, had we kept on, been compelled to reprint the entire book. We are

able to state that the work is from the hand of a master—a master in style, in clearness, and in strategy. What more does one want in a historian? While the work may not possess the sledge hammer sarcasm of Carlyle, it is full of such keen, incisive advise to the Russians that the rapier thrusts must still be smarting far more than would have heavy blows.

The book contains 656 pages, type quite large and clear and legible. There are thirty-eight maps of the hachure style, but they are far the best we have seen. The names in the print are carefully made to correspond with the names on the maps, which is something that has saved us much temper lost in other works on this war. The important engagements are illustrated by maps showing the different phases of the battle from time to time. For instance, the battle of Liao Yang has ten maps to illustrate the changing phases of that terrific struggle. Four maps are given to battle of The Shaho, three to the battle of Heikautai, and two each to the following battles: Yalu, Kinchou, Telissu, Fenshuiling, Moteinling, Tashihchiao, Yangtzuling and Yushulintz. The naval battle of Tsushima is illustrated by four different phases.

But the maps and the clear, vivid description of grand tactics is not to our mind the greatest value of the work. We were continually impressed with the lesson that the principles of strategy are immutable and as unchanging as the laws of the Medes and Persians, though the application of these principles vary with each campaign. Here we are studying not the varying phases of a battle, but WAR. Studying war, not only as an art, but even as a science, though we know we may be in the minority in saying war is a science. The influence of the combination of the land and naval forces was never so clearly demonstrated, and when we finish a particular chapter we remark: "How simple! How easy?" Anything is easy to a master, and when that master has the happy faculty of clear exposition, to hearers and readers anything he handles becomes easy.

Here is a book for the close military student of detailed campaigns. Do you want to follow the varying phases of a single battle? Here you will find yourself able to do so with

greater ease and clearness than by the use of anything published so far upon this war. Do you want to illustrate a principle in strategy? Here you will find the principle pointed out so clearly that you will probably be forced to accept the very words of the text. Do you want to point a moral and adorn a point by the necessity of combination of army and navy? Never will you find that illustrated to a better advantage than here. Do you want to teach a lesson on organization, organization in all its details, that descends to the absolute necessity of each separate detachment commander being in closest connection with the all-directing head? Here you will find it to such an extent, in the Japanese armies at least, that you marvel and wonder if ever we will reach that point in our own army.

We have carefully read every word in this book and given it the attention that we could devote to the subject, and we unhesitatingly state that this is the book upon the war that army officers must have.

In this review of books upon this war publishers are given to understand in sending us copies for review, that the review will be unflinchingly given; that no book will be recommended for purchase to the readers of the JOURNAL unless it is deserving. We have been compelled to say harsh things about many books that some persons like, but their value to the military student has not been clear to us, and so we recommend no expending of money for them. In order to keep the amount of books to be purchased down to a reasonable limit, the JOURNAL finds it necessary at this point to cut out one that heretofore it has carried as being a good work on the subject, and that is Cowen's "The Russo-Japanese War." We are still as favorably impressed with this book as ever, but we must cut now somewhere to put in the *Times* publication, and so Cowen must go from our list of recommended purchases.

* * *

We give in our book reviews notices of "The campaign with Kuropatkin" by Douglas Story. This review is by Captain Heintzleman, Sixth Cavalry, who receives all books upon the late war as they appear.

Due to a most favorable impression of Sir Ian Hamilton's book, "A Staff Officer's Scrap Book," among many of our officers and the favorable comments made to us regarding it by General Bell, soon to be chief of staff, we reserve notice of this publication for our next issue.

All in all, in possessing the following books on the struggle, we shall at the present time consider ourselves as having done our duty in studying the war:

On the causes:

"The Russo-Japanese Conflict." (Asakawa.)

On the war:

"From the Yalu to Port Arthur." (Wood.)

"The War in the Far East." (The military correspondent of *The Times*.)

Articles in *The Outlook*. (Kennan.)

For Comparison:

"The China Japan War." (Vladimir.)

We hope that the *Outlook* will publish Kennan's articles in book form soon. All the above have been reviewed in this and the three previous issues of the JOURNAL. Asakawa's book can be purchased from Houghton, Mifflin & Co., for $2.00; Wood's and Vladimir's from The Hudson Press, Kansas City, Mo., for $1.50 each; and "The War in the Far East," from E. P. Dutton & Co., New York, for $5 00.

THE DISCONTINUANCE OF THE PRIZE ESSAY.

The Executive Council of the Cavalry Association has decided to discontinue the undertaking of producing a history of the American cavalry in the form of a series of historical essays. The abandonment of the prize essay is made after careful consideration and with the idea that better results can be obtained through other work in the JOURNAL.

The money heretofore set aside for the payment of prize essays will hereafter be distributed among the contributors to the JOURNAL, under the following conditions:

The yearly volume of the JOURNAL, consisting of the July, October, January and April numbers, will be carefully

read by the members of the Executive Council, and they will decide upon the value to be given each article. The amounts will be forwarded to the writers at the end of each JOURNAL year, that is, the first of July. The names of writers receiving pay for articles will not be published in the JOURNAL at any time, so that no one failing to receive an award need fear chagrin through having it known that his article was not considered as meritorious as those to which awards have been allotted.

It is believed that this will encourage more officers to contribute, and that the result will be more satisfactory to the readers of the JOURNAL than spending all extra money on prize essays, few of which are extensively read, while some short article may attract much attention. The Council in granting payments for particular articles will be guided principally by timeliness of topic, good common sense displayed, and then by literary merit. The size of the article will have no effect upon the decision.

It is hoped that the Editor's Table will be full of articles on timely topics from our officers, for only by such means can a successful JOURNAL be issued which will be of use to our officers.

SECRETARY'S ANNUAL REPORT, U. S. CAVALRY ASSOCIATION, 1905.

FORT LEAVENWORTH, KAN., Jan. 15, 1906.

The United States Cavalry Association:

GENTLEMEN:—In accordance with the second clause of Article XI of the constitution of the Association, I herewith submit to you, at this regular annual meeting, a report showing the financial condition of the Association.

I relieved Captain M. F. Steele, Sixth Cavalry, as Secretary and Treasurer of the Association and took over the management of the business on April 16, 1905. I will first give you a report of my management, and then I will combine the two reports, that of Captain Steele from January 1, 1905,

to April 16, 1905, and that of myself from April 15, 1905, to the end of the year, so that you can have an idea of the work of the Association during the entire year.

The immediately following report is a detailed statement of receipts and expenditures since I took charge, April 16, 1905.

RECEIPTS.

From Captain Steele, cash on hand, April 16th	$ 32 07	
From subscriptions and sale of Journals	1,562 21	
From advertisements	1,287 82	
Total		$ 2,882 10

EXPENDITURES.

Ketcheson Printing Co.	$ 1,787 75	
Teachenor, Bartberger & Co., engravers	52 64	
Editor and assistant	672 50	
Postage	105 36	
Typewriters	54 85	
Book bindery	21 30	
Printing calendar, etc.	18 50	
Copyright	3 00	
Rubber stamps	3 58	
Express and freight	13 49	
Lumber for shelves	5 60	
Postoffice box rent	1 00	
Checks returned	4 10	
Commission advertising	18 13	
Dues returned	1 50	
Miscellaneous, paper, etc.	20 45	
Total		$ 2,783 75
Cash on hand December 31, 1905		$ 98 35

ASSETS.

Cash on hand Dec. 31, 1905	$ 98 35	
Due on back advertising	125 75	
Subscriptions	946 00	
Total		$ 1,170 10

LIABILITIES.

Teachenor, Bartberger & Co.	$ 80 25	
Commissions on advertising	34 38	
Editor and Assistant	20 98	
Total		$ 135 61
Assets exceed liabilities		$ 1,034 49

Combining the report of my predecessor from January 1, 1905, to April 16, 1905, with the above report we have the following for the entire year:

RECEIPTS.

Cash on hand January 1, 1905	$ 4 19	
Receipts to April 16, 1905	1,448 75	
Receipts from April 15th to December 31st	2,850 03	
Total		$ 4,302 97

EXPENDITURES.

To April 16, 1905	$ 1,420 87	
From April 15th to December 31st	2,783 75	
Total		$ 4,204 62
Cash on hand December 31st		$ 98 35

A statement for the entire year showing the growth of the business during that time is as follows:

Cash on hand January 1, 1905		$ 4 19
Bills receivable:		
Dues one year in arrears	342 00	
Dues two years in arrears	208 00	
Dues for 1905	268 13	
Due for subscriptions	215 00	
Due on advertising	530 94	
Total possible income		$ 1,568 13
Liabilities at that time		1,303 94
Business assets over liabilities		$ 264 19

As can readily be seen a part of the assets is always lost to the Association. Some subscriptions are never paid, and some are paid through agencies whereby a percentage is lost. Some unpaid advertising is too small to pay for cost of collection.

At the end of the year 1905, the business assets exceeded the liabilities by $1,034.49, giving an actual gain during the year of $770.30, the difference between $1,034.49 and $264.19.

There is also this to remember, that the January JOURNAL for 1906 was issued in December, 1905, and the heavy expense of this unusually expensive edition completely paid except the engraver's bill, and enough money was in the treasury to pay that. Consequently all the advertising due

on the January, 1906, issue is velvet to the Association. This amount, all of which will probably be collected during the quarter, is $523.13.

This amount added to the December 31, 1905, assets, given above, makes the assets on January 1, 1906, $1,693.23. Taking from this sum the liabilities on January 1, 1906, $135.61, we have the following on January 1, 1906: business assets exceed all liabilities, $1,557.62.

Of this, perhaps twenty-five ($25.00) dollars on back advertising may be lost. Of delinquent dues, $216.00 are two year dues, and $126.00 are three year dues. The remainder of dues, $604.00, are current dues, and the fact that this amount has not been paid in is, I suppose, that many do not know that the dues are payable in advance. I think it a conservative estimate to say that of the two and three year delinquent dues one-half will be collected during the year and all the one year dues. So I expect the following amount will be collected from the January 1st assets: $1,497.23.

Of the years' good work much, if not most, of the credit is due to Captain M. F. Steele, Sixth Cavalry, my predecessor, who was secretary and treasurer until the 16th of April, 1905. He took charge of the affairs in October, 1904, with liabilities or debts amounting to $1,311.88. He found $7.13 in the treasury, and the assets of all classes, good, bad, and indifferent, exceeded the liabilities by only $62.29. In April, when he turned over to me, he had paid all debts due at that time except $476.15, and the assets exceeded the liabilities by $508.20. I have in the main followed the business lines that he did. The Association is under great obligations to him.

During the past year the Association has paid off a debt of some $1,300.00, and as the prospects of the year 1906 are as good as those of the previous year, there is reason to believe that the end of this year will find us with somewhere near $1,000.00 in the bank.

As for the work of the editor of the JOURNAL of the Association, no officer on duty at the school has time to properly perform his duties to the school and also to the

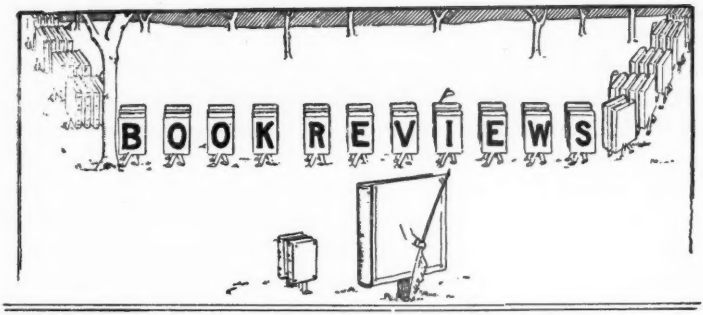
JOURNAL. The work of editing the JOURNAL and running the business is daily becoming more arduous, the business alone requiring most of my forenoons. I would suggest that some cavalry officer of known ability in practice and theory be sought as instructor at the school in equitation, and that he be given the JOURNAL as additional work. No officer can do the service more good than can the editor of the JOURNAL if it be properly edited. If it were possible to find some retired officer of ability and the requisite energy, he might be given the JOURNAL, the Fire Association, and the Library. But you will have to scan the retired list more closely than I have to find one suitable.

My predecessor wrote letters to the headquarters of the several cavalry regiments, asking that they get from their officers an expression as to what power the Association had to voice the sentiments of the cavalry upon any needed questions. Answers received were but few. Some came from the Second, Fifth and Fourteenth Cavalry regiments. It will always be impossible to accomplish anything by this method.

As for the JOURNAL, it still, I believe, maintains its high standard among military publications. It is becoming well known to other publications and has a large and growing exchange list. Book publishers are becoming quite familiar with its department of book reviews, and many of our largest houses request reviews of any works they bring out that might interest military readers. Good articles might be more in number to select from, but at present I have quite a list of readable ones to select from for publication. It may be possible in another year to pay for articles contributed, and then there will be no lack of good material.

Very respectfully,

HERBERT A. WHITE,
Captain Eleventh Cavalry,
Secretary and Treasurer.



The Campaign with Kuropatkin.*

"The Campaign with Kuropatkin," by Douglas Story. Mr. Story was a correspondent with the Russian army in Manchuria, but apparently the Russians were as careful as the Japanese to keep the front clear of correspondents.

One chapter recounts the fighting about Motienling Defile; another describes the battle of Wafangho or Telissu; a third gives the battle of Tashihchiao. Poor sketch maps accompany these three accounts. Then there is a brief account of Liaoyang. With the exception of the above mentioned four chapters, the book is a collection of sketches of Manchuria during Russian occupation that might readily have been written prior to the outbreak of war. Moreover, the chapters on the four battles leave you with a very hazy notion as to what each side attempted to do, in fact you receive the impression that the battles just happened.

Those who desire to read an account of the military operation in Manchuria from the Russian point of view had better pass the book on or prepare to be disappointed.

STUART HEINTZLEMAN,
Captain Sixth Cavalry.

*"THE CAMPAIGN WITH KUROPATIN." By Douglas Story. Philadelphia. G. B. Lippincott Company. 1905.

Problems in Maneuver Tactics.*

The book has been rather well received in Germany, but does not seem to deal with tactical details with sufficient exactness. About eighty pages are given to the statement of two hundred and seventeen problems and about the same number of pages deals with solutions. It is plain from this statement that the amount of space given to each problem is too small to be of value to a beginner in the study of the art of war.

A number of problems, which have been used at the examination for admission to the War Academy, is given with partial solutions. Most students will prefer to study the complete solutions, which can be found in other works.

Some of the maps are poorly made and not sufficient for a complete study of the problems proposed.

As the book appears to be a translation of the German work of Major Hoppenstedt it seems odd that the publishers have left his name off the cover and back, while the name of Major Crowe appears there as if he were the author.

E. S.

Riding and Driving.†

Another book on riding and training, with many valuable hints on driving, as well as horses in general, by Edward L. Anderson and Price Collier. In the breeding of the saddle horse, the value of the thoroughbred, the finest type of horse, is here recognized for ennobling the baser strains. Its history is briefly told in an interesting way, tracing its ancestry in the direct male to the Byerly Turk, Darley Arabian, or Godolphin Barb. These paragraphs on breeding are specially worthy of note, showing how the different types of horses, such as the thoroughbred race horse, the American saddle horse, and the hunter—the ideal type for officer's mount, are produced by careful "selection and exclusion."

*"PROBLEMS IN MANEUVER TACTICS." Translated from the German of Major Hoppenstedt, by Major J. H. V. Crowe, R. A. New York. MacMillan Co. 1905. Price $1.60.

†"RIDING AND DRIVING." By Anderson & Collier. The MacMillan Co., New York. Price $2.00.

In handling the young horse, prior to his higher training, the author lays much stress on its being done in a quiet and progressive manner, so as to give it confidence, and to avoid those faults and vices which usually arise from the efforts of the nervous animal to avoid restraint before it has been taught by easy steps to yield instinctively to the demands of the trainer. The value of cavesson, the simple bending of the head, neck and jaw with the snaffle, and the habit of freely going forward against a light tension of the reins, is also noted.

The chapter on the purchase, care and sale of horses is full of "horse sense," and gives the author's type of ideal saddle horse. This is followed by a description of the saddle horse stock farms of General Castleman, Gay Brothers, Colonel Woodford, and Ball Brothers, all within a radius of thirty miles of Lexington, Kentucky.

The next three chapters are devoted to the saddle, the bridle, mounting, the seat, and horsemanship in general the world over, making special note of our own school at Fort Riley and to "that master of the art, H. L. DeBusigny," probably the best living exponent of scientific horse training.

Mr. Anderson devotes the balance of the book to training, giving those simple exercises known as the flexions, with the snaffle and the double bridle for gaining control of the muscular system of the horse, and making him absolutely obedient, safe, and pleasant to ride. He commences with the flexion of the muscles of the jaw, which open and close the mouth, then those which bend the head upon the neck, and finally, those which raise the head and neck. The combination of these simple flexions of the head, neck, and jaw, gives us that desirable high-head carriage, with the head bent in on the neck making the face vertical or nearly so, and the jaw playing freely. He then obtains control, by means of the heel, of the muscles which move the haunches, by revolving the hind legs around the fore legs, and vice versa, as well as moving the hind legs under the body. The combination of these flexions, obtained by placing the horse in the position we so desire by means of the hand and heel, gives the rider

a pleasant feeling of lightness and stability impossible to obtain in any other way.

It must be remembered that a horse has a muscular system like our own, with muscles capable of producing flexion and extension of the different parts of the body. That its body as well as that of the rider has weight, with a center of gravity. That there are one to four points of support depending upon the gait or the position. That the relative position, with the points of support, of the vertical line passing through the center of gravity of the horse and rider varies with the height of the head and the extent to which the hind legs are carried under the body. The position of the center of gravity in the body of the horse alone is of no importance, but the relation of the vertical line passing through it with the points of support is everything. Raising the head will move this point nearer the hind legs. Carrying the hind legs under the body will produce the same effect. By a combination of the two we can place this point as far back as we wish. By making the horse lean its body to the right or left by means of the aids, we place this point nearer the side towards which we lean. So in suppling the muscles, which control the position of these parts, the rider is enabled by means of the hands and heels to place the center of gravity exactly where he wishes it to perform the movement desired and preserve proper equilibrium. This is the great principle of equitation.

The flexions are the simple exercises which supple the muscles of the horse and make it cease all opposition and resistance with the antagonistic muscles, just as the setting up exercises supple the muscles of the recruit. In the case of the horse, however, the will of the rider is communicated to it by means of the aids. As with the recruit it is necessary that these exercises be continued daily for some time until perfect control is obtained; and like men the muscles of some horses will become supple in much less time than others. This process of suppling is carried on at the walk, trot, canter, while moving backwards, sidewards, and when changing direction, as well as when standing in place. The rider can then place the horse in a well balanced or collected posi-

tion while doing all these movements, and he will be able to bring his mount from any extended pace to the collected gait instantly.

Having suppled the horse, it is necessary that its rider understands the use of the aids, and is drilled in their harmonious application. It is through the seat that the rider feels the balance and position of his mount, what it is doing and purposes to do, and by means of the hand and heel he alters this to suit his demands. The rider's heels produce the impulses, which are met and directed by the hands. To properly execute any movement it is first necessary to cause to be produced the muscular impulse, then to meet, regulate and direct it with the hands. Therefore, "the spur must always precede the hand." This, as Mr. Anderson states on page 89, is the secret of success in horsemanship. Hence the rider's heels as well as his hands must be educated by carefully conducted practice.

The second part of the book is on driving, by Price Collier, containing sixteen chapters, covering the natural history of the horse, its early days in America, the points of a horse, the different types of horses, shoeing, feeding, stable management, housing, harnessing, and first aid to the injured, also driving single, a pair, four and tandem.

The book is beautifully bound in cloth, and well illustrated by over one hundred photographic reproductions, and since the bit and bridoon is soon to be authorized in our service, this book should be in the hands of our officers to serve them as a guide for its proper use in training and riding.

ENGLE.

Personal Hygiene.

One of the recent publications by John Wiley & Sons is "Personal Hygiene," by Brigadier General Alfred A. Woodhull, U. S. army retired, now on duty at Princeton University.

The contents of the book originally appeared as a series of lectures delivered by General Woodhull to the classes of the above named university. Abstract physiology has been

kept at the lowest point, and as far as possible technical phrases have been avoided, which greatly enhances the value of the book and makes it most instructive, as well as interesting reading.

After proceeding with a discussion of the structure and composition of the various systems of the human body the author discusses the development and care of the same, laying great stress on the proper kind and amount of exercise with that end in view. The physical culture exercises explained are excellent and capable of being carried out with a little attention to details and a few minutes' time expended each day. The subjects of clothing, food, tobacco and alcohol are well discussed. W. H. WALDRON.

The Scout's Alphabet.*

We quote the following from the "Military Mail:" "'The Scout's Alphabet' is a little book intended for the use of scouts. Any man of average intelligence after reading 'The Scout's Alphabet' ought to be able to use his eyes and general powers of observation to good purpose. With the utmost brevity the author imparts a maximum of information in a minimum of space. In the formal notes and queries, instruction is rendered extremely interesting, and whatever a man may see during a reconnoissance if he consults 'The Scout's Alphabet' he will be a duffer indeed if he fails to make proper report upon it. The work, which is thoroughly up to date, should prove of great value to every practical soldier, but especially to cyclers, mounted infantry, and imperial yeomanry, and it ought to be widely read in the army."

The little book, not half so large as a deck of cards, strikes us as quite ingenious and useful. Suppose a subaltern is sent out to report upon the country. He takes this little book and beginning with "A" he sees in the book on the page marked "A," on the right hand page, that he should first report on Accommodation. If he does not know exactly

*"THE SCOUT'S ALPHABET OF NOTES AND QUERIES." From the press of Gale & Polden, London, England. Price, one shilling.

what this means he looks to the left hand page where the note on Accommodation tells him to refer to House and Village.

To show the working of this book device we give a page as example. Turning over four pages given to the letter "A," the first word we strike under "B" is bivouac.

NOTES.	QUERIES.
Bivouac.	Bivouac.
1. Refer W.	1. Water.
	2. How sheltered or concealed.
3. Refer C. Site should be dry, and on a gentle slope. Clay is damp.	3. Country.
	4. Approaches and ways out.
	5. Defensibility.
6. Refer C, Camp Areas.	6. Area.
	7. Facilities for obtaining fuel forage and straw.
Bridge.	Bridge.
1. A bridge that will carry infantry in fours crowded at a check, will carry any of the field guns, and most of the ordinary wagons that accompany an army in the field.	1. Material and number and form of arches and available for what arms.
	2. Length, breadth and height, and breadth and depth of stream.
	3. Height of roadway above water.
	4. Defensibility: (a) parapet. (b) banks. (c) cover. (d) approaches.
5. Refer F.	5. Ford near.
6. Materials usually available for construction of bridges in the field are hemp or wire rope, railway plant, spikes, dogs, light iron forgings, such as nuts, bolts and straps.	6. Timber and material for blocking and for reconstruction.
	7. Whether capable of bearing heavy traffic such as motor transport.

It will be noticed that the queries under bivouac are seven in number. The written report upon bivouac should state something about the most important element to be considered, water. Yet this subject would probably be covered in the report under the head "Water," and so the report at this place would read, "Refer to Water." The same as to the third query on bivouac, "Refer to Camp," etc., etc.

The pages of the book are numbered at the bottom, the top being marked with a big black letter, initial of the

subject considered. A little page on conventional signs is appended. We believe that a soldier of ordinary intelligence can make a first-class report by using this little volume; and to test its value in the hands of the ordinary enlisted man we sent the book to a troop commander and asked him to try a report or two from some of his troopers, and then give us his ideas of the usefulness of such a scheme. We give his ideas as follows:

"I have found after a practical test, that "The Scout's Alphabet" is of the greatest assistance in aiding scouting parties and patrols in transmitting intelligence quickly, accurately and concisely.

"I explained the use of the book to one of my men. I then gave it to him and ordered him to ride over a certain road, well known to myself, and to report to me on his return. He covered the selected territory, a distance of ten miles, in two hours and a half. His report was thoroughly comprehensive. His description of the road, bridges, streams, farms, crops, telegraph lines and defensible positions was just the information a commander would want.

"The Scout's Alphabet" is of such a size that it can be carried conveniently in the pocket of the service blouse, flannel shirt, or even in one of the pockets of the field belt.

This book should be supplied to every troop and company at the rate of one for each noncommissioned officer, and drills such as that described above should be a part of the practical instruction at every garrison."

FRANK TOMPKINS,
Captain Eleventh Cavalry.

Tactics for the Rank and File*

Is the title of a little pamphlet from the press of Gale & Polden. These English publishers certainly have the faculty of getting small volumes that are of good use. In this little book they have added something to the general information of soldiers on field duties. As stated in the title, this book is really "What to do and how to do it." It is a short collec-

*"TACTICS FOR THE RANK AND FILE." By J. C. O. Mack. From the press of Gale & Polden, Aldershot, or 2 Amen Corner, Paternoster Row, London. Sent post free to any part of the world for a sixpence.

tion of rules for the infantry soldier when acting independently.

The author, J. C. O. Mack, makes no claim to originality, but has endeavored to compile in simple language all that a corporal or private may reasonably be expected to know of operations in the field. It certainly is necessary that all ranks should be able to carry out orders *intelligently*, and especially when removed from the *immediate supervision* of superiors.

The work treats of the following subjects in a clear manner and one easy to be understood by privates reading it: Reconnoitering, Outposts, Advance, Rear and Flank Guards, Instructions to Section Commanders in the First Line, and Instructions to Men in the First Line. After each subject there are questions upon that subject that may or may not be used, according as the officer in charge of instruction sees fit.

Some simple work like this, somewhat larger we think would be preferable, should be adopted for our men, for we must secure some means to give our soldiers in the ranks more instruction about field work. We believe our men about well enough instructed in drill, but certainly they are far from that position in regard to field work. And as we have occasionally remarked, instruction in field work that does not take into consideration the teaching of the enlisted man, is doomed to failure. We cannot have too much drill in work covering the above subjects.

Aids to Maneuver Duties.* This is the title of another of the little sixpence books of Gale & Polden. We do not consider it of much importance, for every officer should know what is in the book as a part of his working duties. We do not see how even the laziest officer would not know as much as the book contains. However, there are little expressions here and there scattered throughout the book that make it well worth reading.

*"AIDS TO MANEUVER DUTIES." From the press of Gale & Polden, Ltd., London. Price, sixpence, post free to any part of the world.

Having been corrected up to date, and embodying the instructions from the "Infantry and Combined Training, 1905," it is, we suppose, indicative of what are the customs and regulations of the British army. And so we take it that careful instruction to subordinates is one of the harped on things of the army, for the first sentence in the book is as follows: "The commanding officer will, before assuming formation for attack, carefully explain to his subordinates what their particular task is." And we find, on through the text, the same idea as to the subordinate commanders and their subordinates.

The main idea of the book is that the most important and useful regulations are compiled in convenient pocket form. It should be especially useful to militia and volunteer officers at maneuvers.

And that reminds us, that the field is open to some enterprising officer of our army to get up a work on maneuvers that will be good enough to be adopted as authoritative, and then we shall not have to depend upon printed orders, inconvenient in form, every time we have a maneuver. A thorough book on the subject would induce to uniformity, and certainly uniformity in maneuvers is what is to be desired. And something in the nature of an umpire's manual is most needed.

On Outpost Duty.*

"On Outpost Duty: What To Do and How To Do It; with Hints on Reports, Reconnoissance and Scouting." This is the title of another pocket size book from Gale & Polden. There is much that is commendable in the publication of these little books. They reach some readers that otherwise would not be reached at all, and they certainly stimulate work among those preparing them as well as the immediate comrades of the officers that write them.

They are of the most convenient size, and can be carried in the pocket, and hence they are readily available in maneu-

*On Outpost Duty: What To Do and How To Do It." From the press of Gale & Polden, London. Sent to any address for a sixpence.

ver duties for the use of enlisted men. The present book on outpost duty, while it gives nothing new and is but an epitome of the work of outposts, is valuable on account of the excellence of its arrangement and its brevity.

It explains the objects and duties of the outpost and then gives general rules for outposts; tells how to command one and where to place the outpost, its strength and composition, and in fact all the little matters that require a working knowledge of the subject.

We hope some time to see some unusually gifted person forge to the front with a valuable work on the subject of outposts alone, one that will command respect and make itself be adopted as a method to be used under all general conditions. And until that time we must content ourselves with getting our knowledge from several sources, not a bad idea as far as a student is concerned, but not good for those not given to hard work. The military student has good ideas of outpost work, culled and gleaned from all sorts of origins, when not familiar with them through experience. But for the general run of officers and men, some regular arrangement, in attractive form and not too cumbersome or tiresome, is needed on this important subject.

We are not in the least crying down Wagner's work on such topics. We are firmly convinced that General Wagner has done more for the good of the American army than any other man that ever was in it. But to say that his work cannot be supplanted by something better, is to say that the world does not move. And it is by such little attempts as this book we are considering that the first start is made. From a small beginning a book may grow and develop, and such growth and development is quite sure to mean careful tests and work with the subject, which means that the accomplished work will be best.

Hints on Stable Management.*

Another of Gale & Polden's pocket volumes is "Hints on Stable Management," by Brigadier General M. F. Rimington, C. B. The author has certainly accomplished what he started out to do, that is, he has written out in simple terms as possible short instructions for the care of horses in the stable and in the field. This book should be in the hands of every noncommissioned officer in the cavalry.

The contents of the seven short chapters are as follows:

Forage.—Where he gives the ration, relative value of hay and grain, and tells of the characteristics of each, and how to tell good from bad.

Conditioning Horses.—Here he speaks of the effect of carrots, linseed, etc. Cause of and cure for bolting oats, lampas, cooked foods, maize, as he calls Indian corn, peas, beans, turnips, potatoes, green forage, etc. These little hints, all of them printed on two small pages, are valuable, as the experience of the author makes him a good man to follow.

Grooming.—Instruction of recruits is given, the method of removing scurf, clipping and singeing; the latter he recommends quite strongly, something we have never seen done in our service.

Shoeing.—A short and good chapter, but if we can only have our own manual in the hands of our noncommissioned officers, to say nothing of our officers, we need have nothing more.

Care of Horses in the Stable.—Here he speaks of remounts in general, of the watchfulness necessary by any person who is responsible for the condition of the stable, of the cure of kicking horses, putting on a twitch, ventilation, and care of saddlery, the last being copied from the regulations.

Bitting and Leaving the Ranks—Bits.—Well of course there being only one bit in the world, all the rest being makeshifts, he never supposes for a moment that anything but the bit and bridoon will be used, as can be seen from his language in one place, where he states that when the men dismount on the march they should lead with the bridoon reins. He speaks

*From the press of Gale & Polden. Post free to any part of the world. One shilling.

of our old friend, the Mohawk, tells how it may be simply made by the farrier, and explains how useful it is at times when other methods fail. One expression we liked very well, in this subject of bitting, and that was in speaking of a puller, he states, "It takes two to make a puller." He tells of the Carrago noseband, the American running rein, and the fixed martingale. The last chapter is "On the March and in Camp." It is largely given to sore backs and their prevention. In speaking of the care of horses when exposed to severe weather, he states as follows: "A writer in *The American Cavalry Magazine* (THE JOURNAL) was the first to point out that in very cold winter weather in camp it was the greatest mistake to remove the scurf or dandruff with a brush, and that horses so treated deteriorated greatly, while those not brushed maintained their condition. It has recently been shown by physiologists that dandruff contains a considerable amount of oily matter which is of the utmost importance when horses are kept in the open. Wisping should be resorted to, and the brush used only to take off the rough mud stains and for the mane.

We quote his conclusion in full:

"That the foregoing notes are by no means 'a complete guide' I am well aware. Recourse must be had by those who wish to be really well up in the subject to works such as those of Sir F. Fitzwygram and Mayhew; wilst 'Von Schmidt' will give them an idea of what can be done with horses which are fit, and will at the same time do much to create the interest and keenness as to horses which should characterize all cavalry soldiers. The example afforded to those under one by one's taking a keen interest in the horses will alone carry one a long way. Bear in mind that though the cavalry soldier is often heard to grumble about the trouble 'the long-faced' one gives him, he really all the time loves his horse, and enters most thoroughly into any scheme or proposal for improving his condition and appearance. Constant supervision and visits at unexpected hours at stables will check irregularities and carelessness amongst stable guards. Much can be noticed amongst horses when they are standing still in the stable without the bustle of stable duties going on around them, which will lead one to a closer understanding of their peculiarities, and to the successful treatment of any ailments they may suffer from.

"Remember that 'what is not inspected is neglected, and if you neglect your horses, and do not keep those in charge of them up to their duties, no credit for their good appearance and fitness will ever accrue to you.

"Endeavor to make every man under you feel an ownership in the horse assigned to him, and hold him responsible for its good training and condition.

"On service where a man by a little extra care and trouble can often obtain a little more forage or some titbit for his horse, this is especially needful.

"With cavalry, who frequently must detach small parties, this is ten times more necessary than with artillery; the latter are always under the eye of an officer.

"It should be impressed on all soldiers, especially on young ones, that every bump or lump the horses get in stables, or slight strain which may follow on their getting loose in the barrack yard may, indeed, very often does, tell against the horse later on, when the rider's life or liberty depends on the soundness of his mount."

The little book is accompanied by a small plate, giving the horse, both external and the skeleton. The various parts are numbered and the names corresponding to the numbers put just beneath. It would be a very wise thing to have this plate framed and hung in the recreation room of the barracks, for then when the men get into discussions over the various parts of the horse they could settle it by a glance at the plate. Moreover, there are many men in the troop that would be studying the plate until they had learned the names of the different parts of the horse, and we believe it would stimulate interest.

Rifle Exercises Made Easy.

This is an excellent little pamphlet—one of a series published by the Gale & Polden Co., London, to meet the needs of the enlisted contingent of the British service—price sixpence. It contains the manual of arms, sword manual, bayonet exercises, instructions for the care of the rifle, description of the rifle, instructions for judging distances, observation of rifle fire and bayonet fighting, and

is quite profusely illustrated. The information contained in it could only be otherwise acquired by a careful study of several manuals, so it is especially valuable to the enlisted man who has not, as a rule, ready access to all the manuals or the time and capacity for the required study. Its price is a distinct element in its favor. The almost prohibitive price placed upon military text-books published in this country cannot but be a discouragement to the enlisted men who desire to improve themselves. C. E. McCULLOUGH.

The Musketry Course Made Easy.

In their booklet of this name our English friends, Gale & Polden, have turned out a very satisfactory, simple and instructive work. This course is designed to specially train officers and men in musketry in order that graduates may leaven the whole army and thus mould it to one shape, and is divided into the "Ordinary Course" and "Advanced Course." With the latter the booklet does not deal. Examinations in each course are partly written and partly oral.

The Ordinary Course is divided into: Care, mechanism and inspection of arms; the causes of and remedying minor faults; methods of instruction in firing exercises and aiming; quick observation and estimation of range; control and employment of fire; the mekometer. The text-books used are the various British Service Manuals.

In the Advanced Course a certain proportion of the graduates of the Ordinary Course study: The Maxim gun; further instruction in training recruits; viewing and repair of small arms; making diagrams for testing rifles, and the preparation of returns.

The keynote of all instruction in the course seems to be practicality. There is an italicized warning against parrot-like knowledge, and students are advised that they are being fitted for "instructors, not talking machines."

In two particulars, the Ordinary Course as outlined is superior to anything in the hands of our infantry and cav-

alry troops. These are: The quick observation and estimation of ranges and the mekometer.

The British appear to make their range estimating an interesting as well as instructive course. We must do the same before it ever becomes of any actual use as a part of our training. In the Hythe Course service conditions are introduced as far as possible and the instruction is progressive, as is shown by the following outline:

1. Develop the mental powers of the recruit by requiring him to give a brief description of anything he may have observed while marching to or from his drills.

2. Place the recruit in a position he would occupy on service, and require him to count figures placed in the open at gradually increasing distances and in varying positions; and subsequently figures which appear at brief intervals, their appearance being announced by the discharge of a round of blank ammunition.

3. As progress is made, carry out the procedure as outlined in (2), with figures placed behind natural features.

4. Explain the features of any section of country in reference to its possibilities for fire, effect and cover. The squads to be then individually required to give a brief description of anything they may have observed in connection with the same.

The principal advantage of the English system over ours is that these exercises are made obligatory. With us they are advisory in effect, since time is hardly ever allotted especially to them, and their execution is thus left to company or battalion commanders.

This book is well worth the price (one shilling) to any officer who is seeking a definite system for training his men. The ideas are not particularly new, but they are joined connectedly and progressively. The phraseology is simple and within the scope of the average noncommissioned officer's understanding. There is, of course, much that is not applicable to our own weapon and much that is covered, in a different way, by our own firing regulations, but even so, there is enough meat left to supply food for considerable thought.

P. W. BECK.

Physical Drill with Arms Made Easy.

History again repeats itself; if not in the same set phrase, yet in spirit. It remained for the Germans to see the superiority of our frontier system of double or triple outpost sentinels and return it to us under the name of "Cossack post." This time Gale & Polden, the prolific Aldershot publishers, have sent us a copy of Butts' Manual, under the name of "Physical Drill With Arms Made Easy," etc. The book is briefer than is our own publication and, on a tangent, contains a few bayonet exercises which follow closely the United States bayonet drill. There is little if anything new in the work.

However, the publishers make no claim to originalty for their work; it is simply labelled: "In accordance with the appendix to training manuals, and corrected up to date." Like almost any foreign drill book its chief value (price one shilling) to us is simply as a means for comparing our system with another.

P. W. BECK.

Elements of Hippology.*

A new book of some 150 pages has reached us from the U. S Military Press at West Point, N. Y. It is another book on the horse, and is called "Elements of Hippology." It is written by Captain F. C. Marshall, Fifteenth Cavalry.

The book is a tentative edition of a text that the author has in mind for use by the cadets. A part of the month of February in first class year, is now devoted to the study of the horse. To illustrate his remarks to the cadets, Captain Marshall has evidently written a number of short articles upon the horse, and has finally concluded to bind these remarks into a book. It was impossible to get out of any book available, eleven lectures that were exactly suitable for the purpose of instruction of the cadets, and so this preparation naturally arose.

*"ELEMENTS OF HIPPOLOGY." From the U. S. Military Academy Press. By Captain F. C. Marshall, Fifteenth Cavalry. Commercial edition to appear later.

It is to be borne in mind that the instruction at the Academy is elementary, and so this book is not a treatise on the horse. It is the author's intention if the book is well received, to get out a commercial edition later, enlarging the latter part of the present text, and amplifying the whole work with copious notes.

From a perusal of the book, we should say the work is most admirably adapted to its purpose. The author has evidently tried to tell the cadets just as much about the horse as can be learned in eleven lessons. He has made the terms as simple as possible, has avoided technicalities, and has illustrated freely. It is to be remembered that the cadets should not be given a long course in the study of the horse. Their time is so taken up now, we hardly see where the time ever came from to give as much as eleven lessons to hippology. But we are glad to see that some time is given to a subject that will be of such importance to the great part of them after they graduate, no matter what branch of the service they select.

Captain Mashall has divided his work into nineteen chapters, as follows: 1. General Definitions; 2. Age, as Determined by the Teeth; 3. Inflammation; 4. The Head and Neck; 5. Bits, Their Action, Influence and Proper Use; 6. The Front Leg; 7. The Position of the Saddle; 8. The Trunk; 9. The Hind Leg; 10. The Aids in Horsemanship; 11. The Foot; 12. Diseases of the Foot; 13. Theory of Proper Horseshoeing; 14. The Lungs and Air Passages; 15. The Digestive Apparatus; 16. Stable Management; 17. Preventable Disease; 18. Irregularities of Action; 19. Judging and the Examination for Soundness.

The book is somewhat unique in the arrangement of chapters. The idea has been followed of treating the anatomy, conformation and common diseases of the horse by regions instead of requiring the student to learn each subject separately for the whole horse. The author acknowledges his consultation of such authors as Carter, Fitzwygram, Law, Hayes, Fillis, Goboux and Barrier, Seaton, and of the work of the Department of Agriculture. But we are

rather inclined to believe that most of the work of the author is based upon his own experience.

This is what we like in the book, for we can make our own compilations from authors, but are particularly glad to welcome any original addition to the works upon the horse. We shall await with interest the amplification of the present book.

History of the Third Pennsylvania Cavalry.

The "History of the Third Pennsylvania Cavalry in the American Civil War" is a large, beautiful volume with some 650 pages, and about thirty plates and two maps. This work was compiled in accordance with a resolution of the Third Pennsylvania Cavalry Association by a committee under the chairmanship of Colonel William Brooke Rawle. It appears that the history committee is composed of men that were officers or soldiers in this regiment during the war, and from various sources material has been brought together and put in accessible and intelligent form.

The idea of regimental history is one of the best ideas that historians have adopted for writing the history of our Civil War. Had we such a history for each regiment in the war as this of the Third Pennsylvania Regiment, military students could find authentic history with comparative ease. For instance, take this very work we are reviewing. Does the student wish information upon the history of the Army of the Potomac during the first three years of the war; does he wish to know some point of the personal movements of Grant and Meade and their headquarters, here he will find much that will be found nowhere else. What an advantage it would be had we every regiment in the war historically recorded as is this one. And it should be done.

We have not had the time to compare this history with the War Rebellion Records but our high regard for the chairman of the historical committee leads us to believe that only the most authentic statements are given in the book.

Moreover, in writing a regimental history, there are, fortunately, enough of the old regiments left to make the compiler very sure of his ground before he commits irrevocably to print something not well founded in fact.

History, Tom Reed has said, consists of the lies that men have agreed upon. But certainly no set of men can agree upon anything in a regimental history unless it has actually occurred, for many of the participants are still living, and to accuse all men engaged in the Civil War of swelling accounts of that terrific struggle would be contrary to all common sense, as well as to all belief in the honesty of mankind. History is of little use to us if not accurate, and we believe accuracy one of the great features of this compilation, for, as stated above, its method of construction leads to that belief.

As for the work during the war accomplished by this exceptionally busy regiment, we have not space to give more than the briefest mention. The history covers the movements and doings of the regiment from just before the beginning of real earnest campaign work, March 1, 1862, to the end of the war.

This is a celebrated regiment, known first as "Averill's Cavalry," and was the first volunteer cavalry regiment organized for the three years' service and was the first to take the field. At first its troops were scattered about among the infantry, doing escort and orderly duty, scouting and picketing for corps and division commanders, but finally it was brought together and reorganized as the Third Pennsylvania under Colonel Averill.

It led the advance of the Army of the Potomac upon the Confederate works at Manassas. Transferred with that army to the Virginia Peninsula it again led the advance to Big Bethel. It was actively engaged throughout this campaign and helped to cover the falling back of the army from Malvern Hill to Harrison's Landing. Present at Antietam, and gained a brilliant record fighting upon the Blue Ridge, and spent the winter of 1862–63 with the army in front of Fredericksburg, and was engaged in the first real cavalry fight of the war, Kelly's Ford, March 17, 1863. From Brandy Station it fought along the plains and hills of Virginia, Maryland,

and Pennsylvania, and was on the right flank at Gettysburg. It hovered over Lee's retrograde movement, and next year was ordered to duty at headquarters of the Army of the Potomac, and with the headquarters of General Grant campaigned around Richmond.

This indicates that there is much material in this work for the military student. We congratulate the history committee and Colonel Brooke Rawle on the success of their work. The volume is priced at four dollars to those not members of the Third Pennsylvania Cavalry Association, and is well worth the price. Any one wishing the book should send the above amount to Mr. John C. Hunterson, treasurer Third Pennsylvania Cavalry Association, 311 Wharton Street, Philadelphia.

RESERVED FOR REVIEW LATER.

"Gustav Adolf, the Father of Modern War." Lieutenant Colonel Honorable E. Noel, late Rifle Brigade. London. John Bale, Sons & Danielson, Lmtd.

"Notes on the Evolution of Infantry Tactics." Colonel F. N. Maude, C. B. London. Wm. Cowles & Sons, Lmtd.

"Scrap Book of a Staff Officer." General Ian Hamilton. London. Arnold.